

CAUSAL ATTRIBUTIONS AND PERCEPTIONS REGARDING  
SELF AND OTHERS IN DEPRESSED AND  
NONDEPRESSED SUBJECTS

By

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## CHAPTER I

### INTRODUCTION

Depression is considered to be one of the major mental health problems within the United States. According to a special National Institute of Mental Health report on The Depressive Disorders (Secunda, Katz, Friedman, & Schuyler, 1973), depression accounts for 75% of all psychiatric hospitalizations. Recent estimates suggest that about 20% of the general population will experience significant depressive symptoms during their lifetime (Craighead, 1982). Although many people recover from depressive episodes, the disorder can be lethal; approximately one out of every 100 individuals with a depressive illness dies by suicide (Williams, Friedman, & Secunda, 1970). Despite the prevalence and seriousness of depression, relatively little research has addressed the psychological aspects of the disorder. Rather, the refinement of theoretical formulations of depression (Mendelson, 1970), as well as the identification of biological correlates of the disorder (Friedman & Katz, 1974) have proved to be the principal areas of clinical and scientific interest.

Although the list of specific symptoms is extensive, there is general agreement that depression encompasses distinct changes in mood and subjective experience, in thinking and evaluation, and in social, interpersonal, and physiological functioning (Beck, 1967; Becker, 1974; Grinker, Miller, Sabshin, Nunn, & Nunnally, 1961; Mendels,

1970). Nonetheless, there is still controversy regarding the causes of these alterations and the most valid diagnostic classification scheme.

Historically, depression has been viewed primarily as a mood disorder in which cognitive and behavioral deficits are secondary to the affective disturbance. Recently, this conceptualization has been challenged and several theories have emerged which emphasize the role of cognitive processes in the etiology and maintenance of depression. Cognitive theories are concerned with the characteristic ideas, perceptions, evaluation processes, and beliefs of the depressed individual. Furthermore, the cognitive position proposes that depressive affect and behavioral symptoms are a function of characteristic cognitive appraisals of stimuli and situations.

The present study is concerned with the relationship between depression and two areas of cognitive dysfunction which have been implicated in the disorder: perception and attributions. More specifically, the current investigation seeks to examine depressed and nondepressed subjects' perceptions of social situations and their beliefs regarding the causes of these social events. In addition, the study will explore the generality of these processes by presenting subjects with social interactions which are either self-related or other-related.

## CHAPTER II

### REVIEW OF THE LITERATURE

#### Beck's Cognitive Theory of Depression

On the basis of his extensive clinical experience with depressed patients, Beck (1967, 1976) proposed that dysfunctional cognitions are central to depressive phenomena. Thus, while depression may be precipitated by external events, it is the individual's perception and appraisal of the event which render it depression inducing. Beck has posited that depressives typically exhibit a "cognitive triad" of negative beliefs related to the self, the environment, and the future. The self is viewed as deficient, unworthy, and inadequate. In addition, depressed persons are likely to engage in considerable self-blame and criticism. Depressed individuals tend to perceive interactions with the environment as characterized by defeat, deprivation, and disparagement; life is viewed as consisting of a succession of burdens and obstacles. Finally, depressed persons display negative expectations regarding the future; they perceive current difficulties as persisting indefinitely and anticipate repeated failure.

In addition, Beck (1967) has argued that depressives have internalized a set of fundamental beliefs or schemata which contribute to the development and maintenance of a pervasive negative cognitive orientation. Following cognitive theorists (e.g., Neisser, 1967),

Beck views a schema as an organized representation of prior experience which facilitates recall and directs the processing of incoming information. Information that is inconsistent with the general orientation of the schema often is ignored or minimized, while other aspects of the information are elaborated in a manner which makes them compatible with the schema. Furthermore, Beck has noted that depressed persons typically engage in cognitive distortions which result in the overemphasis of negative data to the relative exclusion of positive information. Thus, Beck contends that an individual's selective attention to dysphoric information and idiosyncratic interpretation of events serves to maintain the validity of an underlying negative schema.

It has been repeatedly demonstrated that there are cognitive correlates to depressive states. Several studies (Beck & Hurvich, 1959; Beck & Ward, 1962) have obtained differences between depressives and nondepressives in terms of manifest dream content, with depressives reporting themes of personal loss and failure. Interestingly, a sleep laboratory study by Hauri (1976) indicated that even among remitted depressives there was a higher degree of negative ideational content compared to normal controls. These results suggest that the ideation may not be simply a concomitant of a depressed state, but may represent a more permanent quality in the thinking of individuals who have been depressed. Weintraub, Segal, and Beck (1964) examined the association between cognition and sad affect in a longitudinal study of male college students. They found that the tendency to select negatively distorted outcomes on a story completion task was significantly correlated with ratings of depressive affect. Also, the cognitions were more enduring and stable over time than the ratings of affect.

In addition, there is evidence that depressed individuals exhibit characteristic patterns of response to feedback that may reflect biases in their evaluation and interpretation of self, situation, and future. Loeb, Beck, and Diggory (1971) demonstrated that depressed patients were more pessimistic about the likelihood of future success on a card-sorting task, and evaluated their performance more negatively than nondepressed persons, even though the actual performances of the two groups did not significantly differ. Other studies have provided evidence that depressives are particularly sensitive to laboratory failure experiences. Loeb, Beck, Diggory, and Tuthill (1967) found that depressed subjects reacted to failure on a card-sorting task with significantly greater pessimism and lower levels of aspirations than nondepressed patients. Hammen and Krantz (1976) obtained comparable results in a study in which depressed and nondepressed female college students were provided with either positive, negative, or neutral feedback on a test purported to measure psychotherapeutic ability. Compared to all other groups, depressed subjects who received negative feedback reported the least positive expectations regarding future performance. Furthermore, depressed subjects evaluated their personal qualities more negatively than the nondepressed subjects on characteristics for which feedback was provided and also for items not mentioned in the feedback process. Subjects also completed a story completion task designed to assess cognitive distortions. Compared to nondepressed subjects, depressed persons selected more responses that reflected negatively-distorted themes.

Several studies have provided support for Beck's (1967) contention that depressives typically assign responsibility to themselves

for negative outcomes. Rizley (1978) attempted to examine depressed and nondepressed subjects' retrospective causal ascriptions for performance outcome. The subjects were instructed to perform on a number-guessing task in which success and failure were experimentally controlled. Subjects then judged the degree to which ability, luck, effort, or task difficulty contributed to the outcome. Compared to nondepressed individuals, depressed subjects rated internal factors (effort and ability) as more important determinants of failure but as less important for success. Klein, Fencil-Morse, and Seligman (1976) found that among college students who were tested on a series of patterned anagrams, depressed subjects were more likely than nondepressed to attribute failure, but not success, to their own abilities.

A number of studies have obtained results which are consistent with Beck's (1967) observation that depressed individuals are more likely to remember negative material than positive information. For example, Lishman (1972) demonstrated that, compared to nondepressed patients, depressed patients tend to recall material with a higher negative tone.

Following Wener and Rehm (1975), who found unexpectedly that more depressed subjects frequently underestimated the percentage of positive feedback messages they had received on a laboratory task, several feedback studies have examined the recall of reinforcement and punishment in depression. Nelson and Craighead (1977) found that depressed subjects, when given a predetermined rate of reinforcement, recalled less positive feedback and more negative feedback than nondepressed subjects while performing on a laboratory task. In addition, the authors found that this phenomenon was greatest in the high positive

and low negative feedback conditions. DeMonbreun and Craighead (1977), employing a similar methodology, found that depressed patients significantly underestimated the amount of reinforcement received when asked to recall previous performance, in contrast to the control subjects. Rather than providing subjects with externally controlled feedback, Gottlib (1981) instructed subjects to self-administer reinforcement and punishment on the basis of their performance. Depressed subjects underestimated the amount of self-administered reinforcement and overestimated the level of punishment relative to the estimates of nondepressed participants.

The documentation of differences in cognitive content and process between depressed and nondepressed subjects does not imply that such differences are causal to depression. However, a number of studies using cognitive induction procedures to generate negative mood states provide more persuasive evidence for the primacy of cognitive factors in the etiology of depression. Velton (1968) instructed normal subjects to read self-referent statements which were depressing, elating, or neutral in emotional tone. Subjects reading the negative statements reported an increase in dysphoric mood. Coleman (1969) reported an induction procedure in which subjects received either positive or negative self-evaluative statements with no reference to mood. The results of the study indicate that the cognitive manipulation produced significant differences in levels of elation or depression, consistent with the content of the cognitive task. Moore, Underwood, and Rosenhan (1973) induced sadness in children by requesting the subjects to think of a sad event. Averill (1969) obtained similar effects by presenting subjects with a movie with sad content.

Recently, several studies have provided evidence which is inconsistent with Beck's (1967) contention that depressives engage in cognitive distortions which maintain a negative belief system. For example, Hoehn-Hyde, Schlottmann, and Rush (1982) found that depressed psychiatric patients and nondepressed controls did not differ in their perceptions of neutral and positive social interactions which were directed toward them. While depressed subjects evaluated self-directed negative interactions less positively than nondepressed subjects, close inspection of the data suggests that nondepressed participants distorted these interactions in a positive manner.

Lewinsohn, Mischel, Chaplain, and Barton (1980) found that nondepressed psychiatric patients and normal control subjects rated their own social competence more positively than did observers. On the other hand, depressed psychiatric patients' ratings of their own social competence were in agreement with observers' ratings of them. In another recent experiment, depressed and nondepressed students were confronted with a series of problems that varied in the actual degree of objective contingency between the performers' responses and the obtained outcomes (Alloy and Abramson, 1979). Interestingly, the judgments of contingency made by depressed students were remarkably accurate. The nondepressed students, in contrast, tended to overestimate the degree of contingency for frequent and/or desired outcomes but to underestimate the degree of contingency when the outcomes were desired.

As previously mentioned, Nelson and Craighead (1977) observed that depressives underestimated the frequency of the positive feedback they received on a laboratory task. However, it was also noted that



nondepressed students underestimated the frequency of negative feedback, whereas depressed students did not. Finally, in a study of self-reward behavior, Rozensky, Rehm, Pry, and Roth (1977) reported that nondepressed control subjects rewarded themselves to a greater degree than their objective performances would warrant. Although depressed patients also tended to overreward themselves, they were more accurate in self-reward than were the nondepressed controls.

#### Learned Helplessness Model

During the past 15 years, the learned helplessness model formulated by Seligman and his colleagues (Seligman, 1975; Abramson, Seligman, & Teasdale, 1978) has had a major impact upon the investigation of depressive disorders within clinical psychology. The model was originally proposed to explain laboratory findings involving infra-humans which indicated that exposure to uncontrollable aversive events often resulted in impaired performance on subsequent tasks. For example, animals subjected to inescapable shock exhibited marked deficits in the acquisition of a shuttle escape response, while experimental controls efficiently learned appropriate escape behaviors (Overmeir & Seligman, 1967; Seligman & Maier, 1967). Seligman labeled this phenomenon "learned helplessness" and proposed that these behaviors resulted from the animal's learning that reinforcement was uncontrollable. Learned helplessness has been demonstrated in a variety of species, including cats (Seward & Humphrey, 1967), rats (Maier, Albin, & Testa, 1973), fish (Funbar & Brookshire, 1969), and monkeys (Harlow, Harlow, & Suomi, 1971). Finally, the effects of uncontrollable events have

been examined in humans (Hiroto, 1974; Hiroto & Seligman, 1975; Miller & Seligman, 1975; Roth, 1973; Roth & Bootzin, 1974).

Noting commonalities between the behaviors of laboratory-produced helplessness and naturally occurring depression, it has been proposed that learned helplessness be considered a model of depression in man (Klein et al., 1976; Klein and Seligman, 1976; Miller & Seligman, 1975). A study by Klein et al. (1976) is representative of the research strategy employed to support this proposal. Performance measures for anagram solutions were obtained from depressed and nondepressed college students previously exposed to either solvable, unsolvable, or no discrimination problems. Consistent with predictions generated by the learned helplessness model, both nondepressed subjects given unsolvable problems (induced learned helplessness) and the depressed control group (no discrimination problems) manifested similar performance deficits relative to a nondepressed control group.

The basic premise of the learned helplessness model is that an individual's expectations of noncontingency between outcomes and responses result in motivational, cognitive, and emotional deficits commonly observed in depression. According to this hypothesis, the motivational deficit consists of retarded initiation of voluntary responses and is viewed as a consequence of the expectation that responding is futile. The cognitive or associative deficit consists of difficulty in learning that responses produce outcomes. That is, it is asserted that a generalized expectancy that outcomes are independent of responses will interfere with the subsequent learning of response-outcome contingency when outcomes are indeed dependent upon responses. As noted by Abramson, Garber, and Seligman (1980), the

learned helplessness hypothesis is construed as a cognitive model in that it asserts that mere exposure to uncontrollable events is not sufficient to produce the helplessness deficits. Rather, the organism must expect that outcomes are independent of responses in order to display the characteristics of helplessness.

As research with humans progressed, several investigators have questioned the adequacy of the theoretical formulations of this model (Blaney, 1977; Buchwald, Coyne, & Cole, 1978). For example, Blaney (1977) argues that in a majority of studies supportive of the learned helplessness model, the induction of helplessness can be interpreted as a self-esteem manipulation. Accordingly, impaired performance may be due to lowered self-esteem rather than the perception of uncontrollability. Similarly, other investigators have questioned the distinction between helplessness and failure, claiming that helplessness inductions are merely a type of experimenter-induced failure (Buchwald, Coyne, & Cole, 1978; Metalsky, LaVelle, & Coyne, 1979). In addition, various researchers have argued that the phenomenon of learned helplessness is demonstrated only when the expectation of uncontrollability is generalized inappropriately to new controllable situations (Cole & Coyne, 1977; Wortman & Brehm, 1976). However, Cole and Coyne (1977) present evidence suggesting that when induction procedures and subsequent learning tasks are perceived as different experiments, the induction manipulation does not produce deficits in subsequent performance. Finally, Costello (1978) argued for the need for increased specification and more direct measurement of cognitive deficits.

In response to this and other criticism, Abramson, Seligman, and Teasdale (1978) acknowledged that the original learned helplessness model had at least three major inadequacies: (1) the model did not account for lowered self-esteem exhibited by depressives; (2) the model did not explain the tendency for depressives to make internal attributions for failure; (3) the model failed to account for the generality or chronicity of depressive deficits. To resolve these inadequacies, Abramson et al. (1978) proposed a reformulated model which incorporates attribution theory (Heider, 1958; Jones, Kanouse, Kelley, Nisbett, Valins, & Weiner, 1971). According to the reformulated model, in addition to the perception of uncontrollable events, individuals make various attributions which establish a causal basis for the response-outcome noncontingency. Also, the revised model posits that individuals attribute causality for noncontingency along three dimensions: internal-external, stable-unstable, and global-specific. A cause may be internal or external, a dimension which determines whether self-esteem is lowered and whether negative outcomes are attributed to oneself or others; stable or unstable, a dimension which determines the chronicity of the helplessness or depression; and global or specific, a dimension which determines to what degree future expectations of helplessness generalize to other situations.

In summary, similar to the original learned helplessness model, the reformulated theory assumes that the expectation that events are uncontrollable is the critical determinant of the symptoms of learned helplessness. However, the old model does not specify the mechanisms by which the perception of noncontingency was transformed into an

expectation that future outcomes and responses are independent. The revised model theorizes that the attributions an individual makes serve a mediating function between the perception and expectation of noncontingency. Thus, an individual's reaction to an uncontrollable event is determined by the causal attributions generated about the event.

Abramson et al. (1978) maintained that individual differences in attributional patterns are likely and postulated the existence of a depressive attributional style. Accordingly, depression-prone individuals should tend to attribute negative outcomes to global, stable, and internal causes. Although not specifically addressed, the model also implies that attributing positive outcomes to external, specific, and unstable factors might increase vulnerability to depression.

Although not specifically designed to examine predictions made by the reformulated hypothesis, several studies have investigated the attributional patterns in depressed and nondepressed students. A common finding was that, relative to nondepressed controls, depressed subjects attribute failure on experimental tasks to internal factors (Klein et al., 1976; Kuiper, 1978; Rizley, 1978). The results regarding depressives' causal ascriptions for success were less consistent. Rizley (1978, Experiment I) reported that depressed students viewed external factors as more important causes for success than did nondepressive students. Kuiper (1978), however, found that on a word-association task, depressed and nondepressed students both made internal attributions for success, with no significant differences between them.

A more direct test of the attributional reformulation was conducted by Seligman, Abramson, Semmel, and von Baeyer (1979). These authors developed an Attributional Style Questionnaire which assesses the content of an individual's causal attributions across various situations. The Questionnaire consists of 12 hypothetical events, six of which describe negative outcomes and six describing positive outcomes. In the initial study, Seligman et al. (1979) found that relative to nondepressed college students, depressed students attributed negative outcomes to internal, stable, and global factors. Also, depressed students attributed positive outcomes to external and unstable factors, as compared to nondepressed students. Recently, the relationship between attributional style and depression has been investigated within a psychiatric population (Raps, Reinhard, Peterson, Abramson, and Seligman, 1982). Compared to nondepressed medical patients, depressed psychiatric patients attributed negative outcomes to internal, stable, and global factors and positive outcomes to external and unstable factors.

In contrast to Seligman et al. (1979), Blaney, Behar, and Head (1980) reported a much weaker relationship between self-ratings of depression and causal attributional dimensions. They found that depressed and nondepressed students differed in their attributional ratings only in terms of the global dimension and a composite attributional measure (internal + stable + global) for negative events. Hammen and Cochran (1981) investigated the causal ascriptions for naturally occurring stressful events among depressed and nondepressed college students. Contrary to the predictions of the reformulated model, the groups did not differ in terms of causal attributions.

While the previous studies lend partial support to an attributional model of depression, they do not provide any evidence to support the hypothesis that attributions are a causal factor in the development of depression. Indeed, it is equally plausible to assume that depression causes an individual to attribute negative outcomes to internal, stable, and global factors. However, there are a few preliminary studies which suggest that attributional style precedes depression rather than the reverse. Golin, Sweeney, and Shaeffer (1981) employed a cross-lagged panel correlational analysis to test the possible causal role of attributions. The results suggested that stability and global attributions for negative outcomes might be causes of depression. There was no support, however, for the hypothesis that internal attributions for negative outcomes are a cause of depression. In addition, Metalsky, Abramson, Seligman, Semmel, and Peterson (1982) conducted a prospective study to determine whether attributional styles predicted depressive mood reactions to negative life events. Consistent with the learned helplessness model, college students who exhibited an internal or global attributional style for negative outcomes prior to a midterm exam experienced more dysphoria when confronted with a low grade than students who typically attributed negative outcomes to more external or specific factors.

#### Generality of Cognitive Processes in Depression

Recently, there has been interest in examining the generality of the cognitive processes which are characteristic of depression. That is, empirical investigations have attempted to determine whether the cognitive distortions manifested by depressives are specific to

situations in which there is personal involvement or represent generalized beliefs regarding the environment.

Lobitz and Post (1979) investigated self/other differences in subjects as part of a general study examining deficits in self-reinforcement among depressed patients. Depressed and nondepressed patients were requested to evaluate and reward their own performance on a variety of tasks as well as evaluate and reward the performance of other unnamed patients. Depressed subjects, in contrast to nondepressed patients, evaluated their own performance more negatively than the performance of others. In addition, depressed individuals rewarded themselves significantly less than they reinforced other subjects, while there was no significant difference in the level of reinforcement nondepressed subjects administered to themselves or others. These results suggest that depressed subjects do not manifest a universally negative cognitive set but are selectively self-critical, as compared to patients without significant depression.

A recent study conducted by Garber and Hollon (1980) suggests that depressives' expectations of response-outcome noncontingency are restricted to situations in which they are personally involved and do not represent generalized beliefs regarding uncontrollability in the world. Changes in expectancies of future performance following success and failure in chance or skill tasks were examined in depressed and nondepressed college students who either performed or observed a confederate perform two tasks. In the skill task, depressed subjects showed significantly smaller changes in expectancy than nondepressed subjects when estimating the probability of their own success. In contrast, depressed and nondepressed subjects did not differ when



estimating the probability of another person's success on the identical skill task. These findings suggest that depressed subjects show the small expectancy changes characteristic of a belief in response-outcome independence only when estimating the probability of their own future success, but not when estimating the probability of another individual's success on a similar task.

Recently, Hoehn-Hyde et al. (1982) attempted to determine whether depressed patients negatively distort social interactions compared to nondepressed controls. Subjects were asked to rate videotaped positive, negative, and neutral social situations in which the interactions were either directed toward themselves or another woman. The authors found that there were no group differences between depressed and nondepressed subjects in the perception of positive and neutral interactions; however, depressed subjects rated the negative interactions as less positive than controls, but only when the interactions were directed toward them.

## CHAPTER III

### STATEMENT OF THE PROBLEM

In recent years, several investigators have posited various cognitive processes which may be critical in the etiology and maintenance of depressive disorders. For example, Beck (1967, 1976) has proposed that depressives engage in faulty information processing that involves primitive modes of organizing reality, such as overgeneralization, personalization, and dichotomous thinking. Alternatively, the learned helplessness model assumes that depressed individuals exhibit maladaptive causal inference patterns which result in a depressive attributional style (Abramson et al., 1978). Several recent studies (Lobitz & Post, 1979; Garber & Hollon, 1980) suggest that cognitive distortions are limited to personal situations rather than events involving others.

To date, only one study has attempted to determine the generality of the causal attributional patterns of depressed subjects (Sweeney, Shaeffer, & Golin, 1982). Depressed and nondepressed college students were instructed to complete the Attributional Style Questionnaire (Seligman et al., 1979) under two conditions. Accordingly, subjects made attributions for positive and negative outcomes which were either self-related or involved a common target person. The results of the study revealed that depressed and nondepressed subjects did not differ in their attributional patterns when interpreting the positive and

negative outcomes of others. However, for self-related outcomes, depressed individuals attributed negative outcomes to more stable and global factors compared to the attributions of nondepressed subjects. In addition, relative to nondepressed students, depressed subjects attributed self-related positive events to more external and specific factors. On the basis of these results, the authors concluded that depressives manifest a maladaptive attributional style only for self-related outcomes. If this is the case, it seems logical to assume that the attributional patterns of depressed subjects will differ as a function of exposure to self-related and other-related outcomes. However, Sweeney et al. (1982) failed to perform any analyses which would detect attributional differences between self/other conditions for depressed subjects.

One purpose of the present study is to investigate potential self/other attributional differences in depressed subjects. Another purpose is to examine the relationship between depressives' perceptions of social interactions and their causal attributions for these events. While depressed and nondepressed individuals may generally perceive social stimuli in a corresponding manner (Hoehn-Hyde et al., 1982), this does not necessarily indicate that these groups manifest similar attributional patterns for social events. Rather, there is evidence which suggests that depressed and nondepressed persons may differ considerably in their recollection of and beliefs about events, despite similarities in their perceptions of situations. DeMonbreun and Craighead (1977) examined both the recall for externally controlled positive feedback and the immediate perceptions of reinforcement in depressed and nondepressed patients. Although depressed

subjects recalled having received less positive feedback than did the controls at a high rate of reinforcement, no group differences were obtained for the subject's immediate perception of positive or of neutral feedback. An additional finding of the Garger and Hollon (1980) study involved subjects' perceptions of the skill and chance tasks. A postexperimental questionnaire revealed that both depressed and nondepressed subjects were able to distinguish appropriately between skill and chance tasks. Hence, it appears that depressed and nondepressed persons did not differ in their perception of the task per se, but only in their beliefs about the efficacy of their own responses.

Finally, the current project attempted to provide further clarification regarding the self-related attributional patterns of depressed individuals. Abramson et al. (1978) originally hypothesized that for self-related events, depressives attribute negative outcomes to internal, stable, and global causes and tend to explain positive events in external, unstable, and specific terms relative to the attributions of nondepressed subjects. However, there is evidence suggesting that depressed college students attribute both success and failure to internal factors (Rizley, 1978, Experiment II; Kuiper, 1978). In contrast, nondepressed persons are biased in a self-serving manner, explaining success by internal, stable, and global causes, while explaining failure by external, unstable, and specific causes (Weiner, 1974). Recently, the term "causal evenhandedness" has been coined to describe the tendency of depressive to attribute positive and negative outcomes in similar terms (Raps, Peterson, Reinhard, Abramson, & Seligman, 1982). Raps et al. (1982) attempted to

determine if evenhandedness is characteristic of the causal attributions of depressed patients. The results suggested that depressed patients judged the causes of positive and negative outcomes to be similar, whereas the nondepressed medical patients judged the causes of positive outcomes to be different from the causes of negative outcomes.

In summary, the current study attempted to determine if depressed college students exhibit attributional patterns which are limited to self-related events or which reflect a general orientation towards the environment. In addition, this study investigated the relationship between perceptions and attributions of depressed individuals. Finally, the study attempted to assess if causal evenhandedness for positive and negative outcomes is characteristic of depressed students.

Depressed and nondepressed female college students, as defined on the Beck Depression Inventory (Beck et al., 1961), were instructed to view videotapes consisting of positive, negative, and neutral social interactions. Following observation of each scene, subjects were asked to complete rating scales related to the subjects' perceptions of and causal attributions regarding each interpersonal scene. Subsequent to the presentation of all the scenes, subjects were requested to provide a general evaluation of the scenes. All subjects observed the videotapes under instructions to imagine the interaction as being directed towards themselves and with instructions to imagine the interactions being directed to another woman.

It was hypothesized that:

1. Depressed subjects would attribute outcomes to more internal, stable, and global causes for self-related negative interactions than

for negative interactions which involve others. Depressed subjects would attribute outcomes to more internal, stable, and global causes for positive interactions involving others than for positive interactions involving the self.

2. Depressed subjects would not differ relative to nondepressed subjects in the perception of positive, negative, and neutral interactions which were self-related. However, depressed subjects' overall evaluation of the scenes would be more negative than the overall evaluation of nondepressed subjects. This hypothesis is consistent with DeMonbreun and Craighead (1977), who found that although depressed and nondepressed patients did not differ in their immediate perceptions of feedback, the depressed subjects recalled having received less positive feedback than the controls.

3. Depressed subjects would make more internal, stable, and global attributions for self-related negative and neutral interactions relative to nondepressed subjects. Also, depressed subjects would make less internal, stable, and global attributions for self-related positive outcomes compared to nondepressed subjects.

4. Depressed subjects would not differ in their causal attributions for self-related positive and negative interactions. In contrast, nondepressed subjects would attribute self-related outcomes for positive interactions to more internal, stable, and global causes than for interactions associated with negative outcomes.

## CHAPTER IV

### METHOD

#### Subjects

Sixty-six female undergraduates enrolled in introductory psychology courses at Oklahoma State University received extra credit for participation in the study. These individuals were selected from a total sample of 218 female students on the basis of their depression scores on the Beck Depression Inventory (BDI) (Beck, Ward, Mendelsohn, Mock, & Erbaugh, 1961). The mean BDI score for the total sample of students was 7.87. Thirty-three female subjects with BDI scores of four or less were assigned to the nondepressed group. Scores of four or below are well within the nondepressed range scores (Beck et al., 1961; Miller & Seligman, 1973). Thirty-three subjects with a score of nine or above were assigned to the depressed group. A cut-off score of nine was used, as this score has been demonstrated to reliably differentiate depressed and nondepressed individuals within a college population (Miller & Seligman, 1973). The mean BDI scores of the depressed group for the initial screening and retesting were 16.96 and 13.62, respectively. For the nondepressed group, the respective mean BDI scores for the initial screening and retesting were 2.21 and 1.24. Fifteen subjects were eliminated from the experiment. Nine individuals were excluded because their retest scores on the BDI failed to

reach the criteria for the depressed group. Three nondepressed subjects were excluded for failure to differentiate between the self and other conditions. In order to maintain an equal number of subjects between groups, three depressed subjects were randomly eliminated from the study.

### Materials

The Beck Depression Inventory (BDI) is a self-report, multiple-choice, questionnaire designed to measure severity of depression. The instrument consists of 21 categories which reflect various symptoms and attitudes related to depression. Each category includes four to five statements which represent the range of severity of the symptom. Each statement is assigned a numerical value from zero to three which corresponds to its respective level of severity. A total score is computed by summing these values; thus, the possible range of scores is 0-63.

A number of reliability and validity studies provide support for the use of the BDI as an index of depression within a psychiatric population. Beck (1967) report correlations of .67 and .61, respectively, between scores on the inventory and clinical ratings of depression. Additional concurrent validity studies (cited by Beck, 1967) have found the BDI to correlate from .40 to .66 with the Depression Adjective Check List, .75 with the Minnesota Multiphasic Personality Inventory Depression Scale, and .75 (Spearman rank correlation) with the Hamilton Rating Scale. Estimates of internal consistency using Pearson product moment coefficients range from .86 to .93. Recently, Bumberry, Oliver, and McClure (1978) found that the BDI scores in a



college population correlated highly (.77) with clinical ratings of depression obtained from psychiatric interviews.

Two color videotapes, developed by Hoehn-Hyde et al. (1982), served as the social stimuli. Each videotape was composed of nine scenes depicting interpersonal interactions occurring within the context of occupational, peer, and marital (close heterosexual) relationships (Appendix A). Each scene featured a dyadic interaction in which one individual (a male actor) directs verbal comments towards a silent partner. Three professional male actors and a female volunteer were involved in the simulated interactions. The nine scenes in each videotape were identical, except that they differed with respect to the direction of the interaction. In one videotape the actor directs his statements towards the experimental subject (self condition). In the second videotape, the comments of the actor are directed towards another woman (other condition). In order to reduce extraneous variation associated with differences in the direction of the communications, each scene was enacted in a similar manner. In all the scenes, only the face and upper body of the actor was in view. In the first videotape, the actor faced the camera, as if directly interacting with the subject. In the second videotape, the actor again faced towards the camera; however, the back of the head of the female volunteer was also in view, and the message was directed towards the woman.

The nine scenes were divided evenly into positive, negative, and neutral categories, according to the nature of the interaction. The classification of a scene into a general category was based on the independent ratings of four judges (female graduate students in clinical psychology). The judges rated the interactions on a nine point

Likert-type scale. Each space on the scale represented a number from one through nine; the end spaces were labeled positive and negative, respectively, while the center space was identified as neutral. A scene was classified as positive if it received a consistent rating of seven through nine, as negative if it received a consistent rating of one through three, and as neutral if it received a consistent rating of four through six. A consistent rating was defined as three out of four judges rating the scene within the predetermined limits. Each actor was involved in one scene from each category. The order of the positive, negative, and neutral scenes was systematically arranged to control for order effects. In addition, each of the content areas (occupational, peer, and marital) was represented in each of the three categories of interactions.

The videotapes also included a written and oral description of each scene which was presented prior to the interaction. Each visual/auditory description was approximately 20 seconds in duration. Following each description, a simulated interaction was presented. In general, the scenes were approximately 45 seconds in length. Subsequent to each interaction, 90 seconds of blank leader tape were presented to allow subjects to complete the questionnaire. The subject was notified of the presentation of each scene by a two second auditory signal which preceded the visual description by one second.

For each scene, subjects were required to complete a questionnaire designed to assess attributional dimensions considered relevant to depression. The method of assessment was adapted from the Attributional Style Questionnaire (ASQ) developed by Seligman, Abramson, Semmel, and Baeyer (1979). For each scene, the subject was asked to

name a major cause for the occurrence of the interaction and to rate the cause in terms of the attributional dimensions of internality, stability, and globality. For each type of scene (positive, negative, and neutral), four attributional scores were calculated: internality, stability, globality, and a composite attributional score, which was the sum of the scores of the three attributional subscales divided by three. Subjects rated each attributional dimension on a nine point scale. On the internality scale, the endpoints were labeled "Totally due to other people or circumstances" (1) and "Totally due to me" (9). On the stability scale, the endpoints were identified as "Will never again be present" (1) and "Will always be present" (9). On the globality scale, the endpoints consisted of "Influences just this particular situation" (1) and "Influences all situations in my life" (9). The wording of the attributional questions adapted from the ASQ was modified to render these questions more appropriate to the present study. Questions from the ASQ include reference to specific hypothetical situations (e.g., "Is the cause of your unsuccessful job search due to something about you or something about other people or circumstances?"). The attributional questions employed in the present study avoided reference to any particular situation and were phrased in a neutral manner (e.g., "Would you assume that the cause of this interaction was due to something about you or something about other people or circumstances?"). An additional modification was the use of a nine point rating scale rather than a seven point scale as employed by Seligman et al. (1979). Also, the subjects were asked to indicate their perception of each scene on a nine point scale in which the endpoints were labeled "Very negative" (1) and "Very positive" (9).

Two forms of the questionnaire, which were developed for the self and other conditions, respectively, were employed in the study (Appendixes B and C). Each form included similar questions and rating scales; however, the wording of the items differed to reflect the direction of the interactions. The questionnaire was printed on an 11-1/2 x 8 inch sheet of paper. Each sheet contained all the items described above.

Following exposure to all nine scenes of one videotape, subjects were asked to provide an overall evaluation of the scenes on a nine point scale with the endpoints labeled "Generally positive" (9) and "Generally negative" (1). This scale was printed on a separate 11-1/2 x 8 inch sheet of paper (Appendix D).

#### Procedures

The BDI was administered to classes of undergraduates enrolled in Introductory Psychology as a screening procedure to identify depressed and nondepressed female college students. Subjects were informed that the purpose of the inventory was to determine the general mood level of female students on campus. Students were informed that participation was voluntary and that scores would remain strictly confidential. Following the completion of the inventory, students were told that a group of individuals with a wide variety of scores would be invited to participate for extra credit in another psychology experiment involving perceptions of social interactions. Prospective subjects were contacted by telephone and asked if they wished to participate in the experiment. The subjects were given a brief description of the study and an appointment was scheduled.

All subjects participated in the study on an individual basis within three to four days after the initial administration of the BDI. Upon initial contact with the subject, the experimenter introduced himself and provided an explanation of the study. Issues of confidentiality and voluntary participation were also discussed. Informed consent to participate was obtained at this time. The inventory was then readministered to the subject. Any students whose retest scores were not within the predetermined levels described earlier were not included in the final sample, but received extra credit for appearing for the study.

Subjects were escorted into the experimental room and seated directly opposite a video-cassette recorder and television monitor. The subject was positioned approximately 2 m from the VCR equipment. The examiner then instructed the subject as to how to complete the questionnaire (Appendixes E and F). Following these instructions, the subject received the questionnaires and the videotape recorder was activated. Prior to each scene, the subjects were presented with an auditory and visual description of the scene. Subsequent to this description, the subject observed the interaction and then was allowed 90 seconds to complete the questionnaire. An auditory signal alerted the subject to the presentation of the next scene. Following evaluation of all nine scenes, the subjects were asked to provide an overall assessment of the scenes.

Each subject was exposed to both the self and other conditions. The order of presentation of the videotapes was systematically arranged (AABB) to counteract order effects. After the subject had completed the questionnaires related to the initial videotape, she was

asked to evaluate an additional group of scenes in a similar manner as before. However, the subject received different instructions which corresponded to the particular condition represented on the videotape.

Following completion of both sets of questionnaires, the subject was debriefed regarding the nature of the study. In addition, the emotional state of the subject was assessed to identify any adverse effects related to the experimental procedure. Adverse effects were considered unlikely; however, should any subject require further reassurance, she was referred to a licensed clinical psychologist. Also, all subjects were provided with information regarding their test scores on the BDI. Subjects who demonstrated concern regarding their mood were informed of all available mental health facilities which provided services on campus if they desired to pursue this option.

#### Statistical Analysis

Six dependent variables were analyzed in this study. These variables included the four attributional measures (internality, stability, globality, and composite), the initial perception item, and the overall evaluation item. For each scene, scores were obtained for each subject on the four attributional measures and the initial perception item. For each of these measures, scores for the positive, negative, and neutral categories were obtained by calculating the average rating for the three positive, three negative, and three neutral scenes, respectively. In addition, subjects were exposed to these categories in both the self and other condition. Therefore, a subject had six scores (one for each of the three categories in each of the two conditions) for each of the attributional measures and for

the initial perception item. The sixth dependent variable, the overall evaluation item, was obtained for both the self and other conditions. Thus, each subject had two scores (one for each condition) for this variable.

Initially, a multivariate analysis of variance was employed to examine the data obtained for the three individual attributional measures as a control for overall error rate. Univariate 2 x 3 x 2 split-plot repeated measures designs were also utilized to analyze each of the three attributional measures. In addition, the composite attributional measure was subjected to a 2 x 3 x 2 split-plot analysis of variance. In this design, the level of depression (depressed and nondepressed) constituted the between-groups factor A, which was considered the depression variable; the nature of the interactions (positive, negative, and neutral) constituted a within-groups factor B, which was labeled the category variable; the object of the interaction (self and other) constituted a within-groups factor C, which was entitled the "conditions variable."

Univariate analyses were also performed on the data obtained on the initial perception and overall evaluation measures. The initial perception measure was analyzed via a 2 x 3 x 2 split-plot analysis of variance with two levels of depression, three levels of categories, and and two levels of conditions. The overall evaluation measure was analyzed via a 2 x 2 split-plot analysis of variance with two levels of depression and two levels of conditions. All directional a priori hypotheses were subjected to one-tailed t-tests. All non-directional a priori hypotheses were subjected to two-tailed t-tests.

Satterthwaite's approximation (Winer, 1974) was employed to obtain the appropriate degrees of freedom for t-tests involving pooled error terms.



## CHAPTER V

### RESULTS

#### Attributional Measures

A multivariate analysis of variance employing Wilks' criterion was conducted on the internality, globality, and stability attributional scales. This analysis revealed a significant main effect for category,  $F(6,252) = 54.00$ ,  $p < .0001$ , and a significant interaction effect between categories and conditions,  $F(6,252) = 5.06$ ,  $p < .0001$ . Since the multivariate analysis yielded significant results, separate univariate analyses were performed on the individual attributional measures (see Appendix H). For the internality measure, the main effect for categories was significant,  $F(2,128) = 150.15$ ,  $p < .0001$ . Analysis of the stability measure revealed a significant main effect for categories,  $F(2,128) = 52.58$ ,  $p < .0001$ , and a significant category x condition interaction,  $F(2,128) = 6.46$ ,  $p < .002$ . With regard to the globality measure, a significant main effect for category was found,  $F(2,128) = 76.89$ ,  $p < .0001$ , and also a significant category x condition interaction effect,  $F(2,128) = 7.59$ ,  $p < .0008$ . The mean ratings for the attributional measures of internality, stability, and globality are presented for all experimental conditions in Appendix G.

It is important to note that the principal concern of the study was the investigation of differences between depressed and nondepressed

groups and the examination of interactions between the group factor and other independent variables. Since such a pattern of results was not obtained, further analysis of the above mentioned significant effects was not attempted.

A univariate analysis of variance was conducted on the composite attributional measure. A summary table of this analysis is presented in Appendix I. A significant main effect for categories was obtained,  $F(2,128) = 142.85$ ,  $p < .0001$ , and a significant category x condition interaction was also found,  $F(2,128) = 3.31$ ,  $p < .04$ . The mean ratings for the composite measure in all the experimental conditions are presented in Appendix G. Again, these results were not considered pertinent to the primary purpose of the study; thus, additional analyses were not conducted.

A number of a priori hypotheses involving the attributional measures were examined through the use of planned comparisons. It was hypothesized that depressed subjects would attribute negative outcomes to more internal, stable, and global causes for self-related events than for interactions involving others. One-tailed  $t$  tests revealed that this assumption was not supported for any of the attributional measures (Table I). In addition, the prediction that depressed individuals would attribute self-related positive outcomes to less internal, stable, and global causes than other-related positive outcomes was not confirmed for any of the attributional measures (Table II).

One-tailed  $t$  tests were performed comparing the attributional patterns of depressed and nondepressed subjects for self-related positive, negative, and neutral interactions. As hypothesized, depressed

TABLE I  
 PLANNED COMPARISONS BETWEEN THE MEAN ATTRIBU-  
 TIONAL RATINGS FOR SELF AND OTHER CONDI-  
 TIONS FOR DEPRESSED SUBJECTS IN THE  
 NEGATIVE CATEGORY

Scale <sup>†</sup>	Condition		<u>t</u>
	Self	Other	
Internality	6.08	5.99	0.43
Stability	5.62	6.17	-2.84
Globality	6.03	6.21	-0.80
Composite	5.90	6.12	-1.62

<sup>†</sup>Means of nine-point scales; higher scores indicate greater internal-  
 ity, stability, or globality.

TABLE II  
 PLANNED COMPARISONS BETWEEN THE MEAN ATTRIBU-  
 TIONAL RATINGS FOR SELF AND OTHER CONDI-  
 TIONS FOR DEPRESSED SUBJECTS IN THE  
 POSITIVE CATEGORY

Scale <sup>†</sup>	Condition		<u>t</u>
	Self	Other	
Internality	7.78	7.97	0.91
Stability	7.28	7.25	-0.15
Globality	7.30	7.06	-1.08
Composite	7.45	7.42	-0.25

<sup>†</sup>Means of nine-point scales; higher scores indicate greater internal-  
 ity, stability, or globality.

subjects rated the causes of self-related negative events as more internal and global than did nondepressed subjects; the composite measure was also significant in the predicted direction. The mean attributional ratings for the depressed and nondepressed subjects in negative self-related events are presented in Table III. It was predicted that depressed subjects would attribute self-related neutral outcomes to more internal, stable, and global factors than nondepressed subjects. Depressed subjects reported more stable causes for neutral events than did nondepressed subjects, but there were no differences between the two groups for the other attributional dimensions (Table IV). It was expected that depressed subjects would make less internal, stable, and global attributions for self-related positive events relative to nondepressed subjects. This hypothesis was not confirmed for any of the attributional measures (Table V).

Finally, it was hypothesized that depressed subjects would not differ in their causal attributions for self-related positive and negative interactions. This prediction was not substantiated. Rather, two-tailed  $t$  tests revealed that depressed subjects attributed the outcomes for positive interactions to more internal, stable, and global causes than the outcomes of negative interactions. The mean ratings for depressed subjects' causal attributions for positive and negative events are presented in Table VI. As expected, one-tailed  $t$  tests indicated that nondepressed subjects attributed self-related outcomes for positive interactions to more internal, stable, and global causes than for interactions associated with negative outcomes. The mean ratings for the nondepressed subjects' causal attributions for positive and negative events are presented in Table VII.

TABLE III  
 PLANNED COMPARISONS BETWEEN THE MEAN ATTRIBU-  
 TIONAL RATINGS FOR THE DEPRESSED AND  
 NONDEPRESSED GROUPS IN THE  
 NEGATIVE CATEGORY

Scale <sup>†</sup>	Group		<u>t</u>
	Depressed	Nondepressed	
Internality	6.08	5.56	1.67*
Stability	5.62	5.50	0.39
Globality	6.03	5.36	1.88*
Composite	5.90	5.52	1.79*

<sup>†</sup>Means of nine-point scales; higher scores indicate greater internal-  
 ity, stability, or globality.

\* $p < .05$

TABLE IV  
 PLANNED COMPARISONS BETWEEN THE MEAN ATTRIBU-  
 TIONAL RATINGS OF DEPRESSED AND NONDE-  
 PRESSED SUBJECTS FOR SELF-RELATED  
 NEUTRAL EVENTS

Scale <sup>†</sup>	Group		<u>t</u>
	Depressed	Nondepressed	
Internality	5.07	4.94	0.42
Stability	6.39	5.86	1.85*
Globality	5.05	4.68	1.06
Composite	5.50	5.15	1.62

<sup>†</sup>Means of nine-point scales; higher scores indicate greater internal-  
 ity, stability, or globality.

\* $p < .05$

TABLE V  
 PLANNED COMPARISONS BETWEEN THE MEAN ATTRIBU-  
 TIONAL RATINGS OF DEPRESSED AND NON-  
 DEPRESSED SUBJECTS FOR SELF-RELATED  
 POSITIVE EVENTS

Scale <sup>†</sup>	Group		<u>t</u>
	Depressed	Nondepressed	
Internality	7.78	7.52	0.81
Stability	7.28	7.33	0.18
Globality	7.30	7.15	0.43
Composite	7.45	7.33	0.59

<sup>†</sup>Means of nine-point scales; higher scores indicate greater internal-  
 ity, stability, or globality.

TABLE VI  
 PLANNED COMPARISONS BETWEEN THE MEAN ATTRIBU-  
 TIONAL RATINGS FOR THE SELF-RELATED  
 POSITIVE AND NEGATIVE SCENES FOR  
 THE DEPRESSED GROUP

Scale <sup>†</sup>	Category		<u>t</u>
	Positive	Negative	
Internality	7.77	6.08	6.08*
Stability	7.28	5.61	6.67*
Globality	7.30	6.03	4.34*
Composite	7.45	5.90	7.68*

<sup>†</sup>Means of nine-point scales; higher scores indicate greater inter-  
 nality, stability, or globality.

\* $p < .05$

TABLE VII

PLANNED COMPARISONS BETWEEN THE MEAN ATTRIBUTIONAL RATINGS FOR THE SELF-RELATED POSITIVE AND NEGATIVE CATEGORIES FOR THE NONDEPRESSED GROUP

Scale <sup>+</sup>	Category		<u>t</u>
	Positive	Negative	
Internality	7.52	5.56	7.04*
Stability	7.33	5.50	7.32*
Globality	7.15	5.36	6.10*
Composite	7.32	5.51	8.95*

<sup>+</sup>Means of nine-point scales; higher scores indicate greater internality, stability, or globality.

\* $p < .05$

#### Perception Measures

The mean ratings for the perception of positive, negative, and neutral interactions by the depressed and nondepressed subjects in self and other conditions are presented in Appendix K. An analysis of variance yielded a significant main effects for categories  $F(2,128) = 1366.38$   $p < .0001$ , and a significant interaction effect between categories and conditions  $F(2,128) = 4.54$   $p < .01$ . The summary table of this analysis is presented in Appendix K.

Planned two-tailed t tests were conducted to investigate the hypothesis that depressed and nondepressed subjects would not differ in their perceptions of positive, negative, and neutral self-related

scenes. As predicted, the two groups' perception ratings did not differ for all three types of scenes (Table VIII).

TABLE VIII  
 PLANNED COMPARISONS BETWEEN THE INITIAL PERCEPTIONS OF DEPRESSED AND NONDEPRESSED SUBJECTS FOR POSITIVE, NEGATIVE, AND NEUTRAL SELF-RELATED SCENES

Category	Group		<u>t</u>
	Depressed	Nondepressed	
Positive	8.72	8.85	-0.65
Negative	1.85	1.82	0.15
Neutral	5.86	6.16	-1.45

The mean ratings for the overall evaluation of the scenes by depressed and nondepressed subjects in self and other conditions is presented in Appendix J. The results of the analysis of variance for the evaluation measure can be found in Appendix L.

It was hypothesized that depressed subjects' overall evaluation of the scenes would be more negative than the overall evaluation of nondepressed subjects. A one-tailed t test revealed that this difference was significant,  $t(128) = -3.69$   $p < .01$ . The overall evaluation ratings of the depressed subjects were more negative ( $\bar{M} = 5.88$ ) than the ratings of the nondepressed subjects ( $\bar{M} = 6.58$ ).



## CHAPTER VI

### DISCUSSION AND CONCLUSIONS

This study sought to determine whether the attributional patterns characteristic of depressed individuals are restricted to self-related events or reflect generalized beliefs regarding the causality of events. In addition, the study represented an attempt to investigate the relationship between depressives' perceptions of social interactions and their causal attributions for these events. Also, the experiment examined the relationship between depressives' initial perceptions of social events and subsequent overall impressions of these interactions. A final purpose of the study was to assess the tendency of depressed persons to exhibit similar attributional patterns for positive and negative interactions.

Contrary to expectations, depressed subjects did not differ in their causal attributions for self-related and other-related events. It had been hypothesized that the depressed subjects would attribute outcomes to more internal, stable, and global causes for self-related negative interactions than for negative interactions which involve others. In addition, it was expected that depressed subjects would attribute outcomes for positive other-related interactions to more internal, stable, and global causes than for positive self-related interactions. Neither of these hypotheses was confirmed. These results are inconsistent with previous demonstrations of self/other

differences in depressed persons (Garber & Hollon, 1980; Lobitz & Post, 1979; Sweeney et al., 1982).

The hypothesized attributional differences for self-related and other-related events were based upon predictions derived from the reformulated model of depression (Abramson et al., 1978). As noted previously, the model postulates the existence of a depressive attributional style which is characterized by the tendency to attribute negative outcomes to internal, stable, and global causes and to attribute positive events to external, unstable, and specific causes. Furthermore, according to the reformulated model, depressed individuals tend to believe that failure is due to personal incompetence and that other persons are less responsible for negative outcomes which occur to them. Although not specifically hypothesized by the model, it seems reasonable to assume that depressed persons believe that they are less responsible for personal success than are others who experience positive outcomes.

In contrast to these expectations of self/other differences, depressed subjects provided similar interpretations for negative events involving themselves or others. Also, depressed individuals did not differ in their explanations for positive self-related and other-related outcomes. While these findings do not rule out the possibility of a depressive attributional style, the lack of support for the implications of such a style suggest the need for further revision of the reformulated attributional model.

As previously mentioned, Sweeney et al. (1982) concluded that depressed subjects manifest a depressive attributional style only for self-related events. However, the depressed groups' attributional

ratings for self and other conditions were not subjected to direct statistical analysis. Close examination of the data suggest that there is no strong indication of meaningful differences for either positive or negative events within the depressed group. Of course, such a statement is largely speculative since the relevant comparisons were not statistically tested. However, in the absence of direct evidence of self/other differences within the depressed group, the conclusion that such attributional differences exist should also be regarded as tentative.

Alternatively, the lack of findings regarding self/other differences may be a function of the stimulus properties of the social interactions. As noted by Metalsky and Abramson (1982), a major determinant of an individual's attributions about an event are the actual characteristics of that event. It is quite possible that the current scenes provided compelling situational information which strongly influenced the causal attributions of depressed individuals. If this is the case, the similar attributional ratings for self-related and other-related events may reflect the fact that the informational cues were virtually identical for both conditions.

As predicted, depressed and nondepressed subjects did not differ in their perceptions of positive, negative, and neutral self-related social interactions. These findings confirm previous demonstrations (Hoehn-Hyde et al., 1982) indicating that depressed psychiatric patients generally perceive social interactions in a manner similar to nondepressed controls. In addition, the results are consistent with those of DeMonbreun and Craighead (1977), who found that depressed

patients did not differ from nondepressed subjects in their immediate perceptions of neutral, negative, and positive performance feedback.

The results of the current study provided partial support for the expectation that depressed and nondepressed subjects would differ in their attributional patterns for positive, negative, and neutral events. The hypothesis that depressed subjects would make more internal, stable, and global attributions for self-related negative events relative to nondepressed subjects was supported for the internality, globality, and composite attributional measures. These findings substantiate earlier evidence (Kuiper, 1978; Rizley, 1978; Raps et al., 1982; Seligman et al., 1979) that depressives manifest a maladaptive attributional style for negative events. In addition, it was expected that depressed subjects, as compared to nondepressed persons, would make more internal, stable, and global attributions for neutral self-related events. This hypothesis was supported only for the stability measure. These results are inconsistent with those of Kuiper (1979) and Rizley (1978), who found that depressed individuals, relative to nondepressed subjects, tend to make internal attributions for performance feedback which is neutral in nature. Finally, the hypothesis that depressed subjects would make less internal, stable, and global attributions for positive self-related events relative to nondepressed subjects was not confirmed for any of the attributional measures. These findings are inconsistent with previous evidence (Raps et al., 1982; Seligman et al., 1979), indicating differences in causal attributions between depressed and nondepressed individuals for positive outcomes.

Again, this relative lack of support may be due to the nature of the social interactions. Unlike the current investigation, the hypothetical scenes utilized in other studies (Seligman et al., 1979) contain information that is ambiguous with respect to assigning a cause to the outcome. It is likely that, when presented with an ambiguous situation, subjects must rely on their personal beliefs and experiences to assign causal responsibility. Thus, it is probable that individual differences in attributional patterns are most salient in situations which offer few informational cues. In contrast, it is possible that the detailed situational information inherent in the scenes of the present study served to obscure differences in attributional patterns between depressed and nondepressed persons.

However, it should be noted that several studies (Blaney, Behar, & Head, 1980; Kuiper, 1978; Rizley, 1978, Experiment I) have failed to find attributional differences for positive events. In light of the current findings and past research, it appears that the most robust finding for attributional differences between depressed and nondepressed subjects seems to involve interpretations of negative events. This seems to suggest that depressed persons may not manifest a pervasive attributional style which is independent of the nature of the event or outcome. Rather, it appears that depressed persons are particularly sensitive and vulnerable to negative events and tend to explain such events in a maladaptive manner.

A joint review of the perception and attribution data suggests that there was partial support for the expectation that depressed and nondepressed subjects may differ in their attributions for social events, despite similarities in their perceptions of these situations.

At least for self-related negative events, both groups perceived these interactions similarly, yet provided differing causal ascriptions for the outcomes of these events. These findings suggest that depressed and nondepressed subjects perceive a clearly negative social interaction in a similar manner. However, when required to perform the more cognitively complex task of assessing the causal determinants of an event, these two groups interpret these negative events in divergent ways.

Additional results were obtained with respect to the measure involving subjects' overall evaluation of the scenes. As hypothesized, depressed subjects' overall evaluation of the self-related social interactions was more negative than the overall impression reported by nondepressed subjects. Thus, although depressed and nondepressed subjects' initial perceptions were similar, the two groups differed in their subsequent overall evaluation of the scenes. These findings corroborate the results of DeMonbreun and Craighead (1977), who found that while depressed and nondepressed subjects did not differ with respect to their immediate perceptions of performance feedback, depressives subsequently recalled less positive feedback than nondepressed subjects. These results suggest that distortion of environmental stimuli does not occur at the point of immediate perception; rather, this distortion appears to occur subsequent to the initial perception and results in differences between depressed and nondepressed subjects in their recollection and overall impression of these events.

Contrary to expectations, depressed subjects did not display similar attributional patterns for positive and negative interactions.

Rather, depressed persons made more internal, stable, and global attributions for self-related positive events than for self-related negative events. These results are inconsistent with previous evidence (Kuiper, 1978; Rizley, 1978; Raps et al., 1982) indicating that depressed subjects explain both positive and negative events in similar ways. Consistent with earlier research (Harvey, 1981; Kuiper, 1978; Rizley, 1978), nondepressed subjects made more internal, stable, and global attributions for self-related positive events than for self-related negative events.

The fact that the depressed group demonstrated a self-serving bias is somewhat surprising; however, these results are not unique to this study. Actually, a close inspection of the attributional ratings of depressed subjects for positive and negative events reveals that in several studies (Blaney et al., 1981; Harvey, 1982; Sweeney et al., 1982), depressed subjects exhibited an attenuated version of the nondepressive self-serving attributional style. In addition, Hamilton and Abramson (1983) reported that approximately one-half of a sample of depressed psychiatric inpatients exhibited a self-serving attributional style comparable to that of control subjects. The current study also suggests that depressed individuals may provide differential attributional ratings for positive and negative events in a manner similar to that of nondepressed subjects. This finding serves to emphasize the conclusion that, at least in the present study, it may be the causal interpretations of negative events which most clearly distinguish the attributions of depressed and nondepressed persons.

While the present study offers partial support for the attributional model of depression, close inspection of the results raises questions regarding the potency of a depressive attributional style. An examination of the statistically significant differences between depressed and nondepressed subjects reveals that there is little absolute difference in the ratings between the two groups. Thus, the statistical differences may not reflect meaningful reality-based differences which are of clinical relevance.

As previously noted, several other studies (Blaney et al., 1981; Hammen & Cochran, 1981) have failed to provide support for the hypothesized relationship between attributions and depression. More recently, Manly, McMahon, Bradley, and Davidson (1982) were unable to demonstrate a relationship between attributional style and depression among pregnant women. In addition, Hammen and deMayo (1982) found that the depressive symptoms of teachers were unrelated to causal attributions for classroom difficulties.

These findings have implications for the reformulated model of depression. It may be that attributional processes play a more circumscribed role in depression than was originally believed. Rather than reflecting stable, traitlike, cognitive differences, attributional differences between depressed and nondepressed persons may be more situation-specific. If this is the case, research should be directed towards the investigation of the role of highly specific person-environment transactions in the psychopathology of depression rather than the continued examination of individual differences in general cognitive characteristics, such as attributional style.



The therapeutic implications of the current study are particularly relevant to cognitive-oriented therapies (e.g., Beck, 1976). Specifically, the present results confirm the importance of negative events as an area of clinical focus in the treatment of depression. Moreover, it would be useful to investigate the depressives' idiosyncratic interpretations of negative events and to utilize techniques designed to modify the attributions associated with these events. In addition, the use of monitoring techniques in which immediate perceptions are recorded may help mitigate the depressive's tendency to distort accumulated information. The use of immediate feedback inherent in the interactional processes of group therapy could also serve to reduce the distortion of environmental stimuli.

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APPENDIXES



APPENDIX A

SCRIPT FOR VIDEOTAPES

## Self Condition

1. (Narrative. Appears on the screen and is read.)

This interaction occurs between you and your boss. You have just completed a large project, and the boss has asked to speak with you. Rate the interaction according to how you perceive the boss's response to you.

"I appreciated the job you did on your last assignment. It was a difficult task, but you organized it well. I liked your ideas-- they were creative and stimulating. --Really got people going. I've noticed too that you work well with other employees. --Always willing to give others an encouraging word or a bit of direction if they needed it. Keep it up, and I'm sure it won't be too long until you get a promotion."

2. (Narrative. Appears on the screen and is read.)

This interaction occurs between you and your boss. The boss has called you into his office. Rate the interaction according to how you perceive your boss's response to you.

"I don't know what's wrong with you lately. You're the last one to the office in the morning and the first one to leave. In addition, you've had difficulty paying attention to your work and you're making several serious mistakes. I don't know--first one thing and then the other. It just seems that you're not that invested in your work anymore. I tell you what though, unless you plan on making some changes soon, well--I don't know. What do you suggest we do with you?"

3. (Narrative. Appears on the screen and is read.)

This interaction occurs between you and your boss. You are meeting with him to discuss your job assignment. Rate the interaction according to how you perceive your boss's response to you.

"I got the report on your last assignment. I haven't had a chance to read it yet, but as soon as I do, we'll get together and go over some of the major points. --I know that you're anticipating a promotion when you finish your next project. Just remember--it's a tough one and you still have a lot of work to do. Some help from your immediate supervisor might come in handy and save you work in the long run. If you have any changes in the plans for the proposed project, let me know and we'll discuss them at our next meeting."

4. (Narrative. Appears on the screen and is read.)

This interaction takes place between you and your husband (or close personal friend). Your husband is getting ready to go to work, and he's commenting on the plans you've made for the evening. Rate the

interaction according to how you perceive your husband's response to you.

"Look--I don't think we'll be able to go out tonight as we planned. I've had some business come up, and I'll have to stay late at the office. I tell you what, though. Let's plan to go out either tomorrow or the next night to make up for it. What do you say? You pick the restaurant--and if you want maybe a show too. Just remember--not too expensive, we're on a budget."

5. (Narrative. Appears on the screen and is read.)

This interaction takes place between you and your husband (or close personal friend). You both have just finished the evening meal and are sitting on the porch. Rate the interaction according to how you perceive your husband's response to you.

"You know--you're really a special person. It's not just that you're attractive and fun to be with--you're kind and considerate and conscientious about the things that you do. I've enjoyed the times we've had together. Oh--I know we've had bad times as well as the good ones--but with you, it's worth the effort to try and work out our difficulties. I'm hoping that we can look forward to many more happy years together."

6. (Narrative. Appears on the screen and is read.)

This interaction takes place between you and your husband (or close personal friend). Your husband has just come home from work and walks into the living room where you are sitting. Rate the interaction according to how you perceive your husband's response to you.

"I just wish that one of these days I'd come home and find the house clean and dinner on the table. What do you do all day anyway? With all the time you have you shouldn't have any problems getting the housework done. I guess there's no need in my even bringing it up. You haven't changed since we've been married, why should I expect it now? Once a slob--always a slob! By the way--it wouldn't hurt you either to lose ten pounds."

7. (Narrative. Appears on the screen and is read.)

This interaction takes place between you and a friend. The new office furniture which you picked out has arrived and you've asked your friend to come see it. Rate the interaction according to how you perceive your friend's response to you.

"I see you got your new office furniture and decorations . . . (next lines said with a grimace) Brother!--that's some color! Are you sure that's what you ordered? It's not that I don't like it, mind you, it's just that well--don't you think that something in a little softer color--more conservative maybe--might have been more appropriate? Well--I guess everybody has their own taste--it's just

that well--I guess that after they carpet the place it'll look more 'office-like.' I sure wish you hadn't ordered that floor lamp. Oh, hmmm, to each his own."

8. (Narrative. Appears on the screen and is read.)

This interaction takes place between you and a friend. You are telling your friend about the garden you're planning for the summer and asking his advice. Rate the interaction according to how you perceive your friend's response to you.

"You want to make sure your garden is the right size for you. If it's too large--it will demand too much of your time and it will become work rather than enjoyment. Have you decided what you want to grow? People usually plant tomatoes, green beans, okra, and squash--and then whatever else they enjoy. Just remember, a garden is a commitment and must be tended to every day. You can't leave it for a week and expect it to be flourishing when you get back. Why don't you sketch out on a piece of paper how you want your plot to look. Then we'll have something to go by."

9. (Narrative. Appears on the screen and is read.)

This interaction takes place between you and a friend. Your friend recently had heard the results of a cooking contest which you had entered. Rate the interaction according to how you perceive your friend's response to you.

"Heard you won the cooking contest last week--Congratulations! Ellen said there were over a hundred entries in each of the twelve divisions and that the competition was really tough. You really took the honors by winning five of the twelve divisions. I also saw where the paper carried pictures of several of your dishes--I must say you did a fantastic job arranging them--very colorful and appetizing. Hope you plan on entering again next year. I'm sure you'll do just as well or better."

## Other Condition

1. (Narrative. Appears on the screen and is read.)

This interaction occurs between a woman and her boss. She has just completed a large project, and the boss has asked to speak with her. Rate the interaction according to how you perceive the boss's response to her.

"I appreciated the job you did on your last assignment. It was a difficult task, but you organized it well. I like your ideas--they were creative and stimulating. --Really got people going. I've noticed too that you work well with other employees. --Always willing to give others an encouraging word or a bit of direction if they needed it. Keep it up, and I'm sure it won't be too long until you get a promotion.

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APPENDIX B

QUESTIONNAIRE - SELF CONDITION



Rate this scene according to how you perceive the interaction.  
(Circle one number.)

very  
negative    1    2    3    4    5    6    7    8    9    very  
positive

Write down one major cause for this interaction, if it had occurred to you.

---

If this interaction happened to you:

Would you assume that the cause of this interaction was due to something about you or something about other people or circumstances?

Totally due  
to other  
circum-  
stances    1    2    3    4    5    6    7    8    9    Totally due  
to me

Would you assume that in future interactions with this person, this cause will again be present?

Will never  
again be  
present    1    2    3    4    5    6    7    8    9    Will always  
be present

Would you assume that the cause is something that just influences this interaction or does it influence other areas of your life?

Influences  
just this  
particular  
situation    1    2    3    4    5    6    7    8    9    Influences  
all situa-  
tions in  
my life

APPENDIX C

QUESTIONNAIRE - OTHER CONDITION

Rate this scene according to you you perceive the interaction.  
(Circle one number.)

very  
negative    1    2    3    4    5    6    7    8    9    very  
positive

Write down one major cause for this interaction, if you had witnessed this interaction between two people.

---

If you had witnessed this interaction occurring between two other people:

Would you assume that hte cause of the interaction was due to something about the person being spoken to, or something about other people or circumstances? (Circle one number.)

Totally due to other people or circum- stances	1	2	3	4	5	6	7	8	9	Totally due to the per- son being spoken to
--	---	---	---	---	---	---	---	---	---	--

Would you assume that in future interactions between these two people, this cause will again be present?

Will never again be present	1	2	3	4	5	6	7	8	9	Will always be present
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Would you assume that the cause is something that just influences this interaction, or does it influence other areas in the life of the person being spoken to?

Influences just this particular situation	1	2	3	4	5	6	7	8	9	Influences all situations in the life of the person spoken to
--	---	---	---	---	---	---	---	---	---	---

APPENDIX D

OVERALL EVALUATION ITEM

How would rate the interactions overall?

Generally negative	1	2	3	4	5	6	7	8	9	Generally positive
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APPENDIX E

EXPERIMENTER INSTRUCTIONS

SELF - OTHER ORDER

In this study I am interested in how you perceive and interpret another person's responses to you. Rather than asking people to interact with you in a "live" situation, I would like you to observe videotaped interactions which occur in various social situations. As the tape describes each situation, imagine that you are actually sitting in the room with the person on the screen and that you are directly involved in this interaction. For example, if the interaction is described as occurring between you and your husband, imagine that the person on the screen is your husband (whether you are married or not) and that he is interacting with you. At the conclusion of the scene, I would like you to complete a one page questionnaire regarding your perceptions and interpretations of the interaction. First, I would like you to rate the scene according to how you perceive the interaction. Next, I want you to answer some questions regarding your interpretation of the cause of this interaction. That is, if such an interaction happened to you, what do you think would have caused it? While the interaction may have many causes, I want you to pick only one--the major cause of this interaction if it happened to you. Also, I would like you to answer some questions about this cause. You will be given approximately 1-1/2 minutes to complete the questionnaire. When you have finished, turn to the next questionnaire and wait for the next interaction to begin. Are there any questions?

Remember, as each person appears on the screen, imagine that you are actually in the room with this person and that you are interacting with him. Whatever the person says will be spoken directly to you. Let's begin. (Videotape recorder will be activated and the experimenter will move to the back of the room. Following the conclusion of

self-related scenes, the experimenter will explain the next group of videotaped interactions.)

Now I would like you to observe another group of videotaped interactions. However, this time the interaction will involve your perception and input. I am interested in how you perceive and interpret one person's responses towards another individual. As the tape describes each situation, imagine that you are actually sitting in the room with the two people on the screen and that you are observing their interaction. For example, if the interaction is described as occurring between a woman and her husband, imagine that you are in the room observing their interaction. At the conclusion of the scene, I again would like you to complete a one page questionnaire regarding your perceptions and interpretations of the interaction. As before, I would like you to rate the scene according to how you perceive the interaction. Next, I want you to answer some questions regarding your interpretation of the cause of the interaction. That is, if you had witnessed this interaction occur, what do you think would have caused it? While the interaction may have many causes, I want you to pick only one--the major cause of this interaction if you had observed it. Also, I would like you to answer some questions about this cause. You will be given approximately 1-1/2 minutes to complete the questionnaire. When you have finished, turn to the next questionnaire and wait for the next interaction to begin. Are there any questions? Remember, each interaction occurs between two other people, not yourself, in the room with you. Whatever the person says is not directed toward you, but to the other person on the screen. Let's begin. (Videotape recorder will be activated and the experimenter will move to the back of the room.)



APPENDIX F

EXPERIMENTER INSTRUCTIONS

OTHER - SELF ORDER

In this study I am interested in how you perceive and interpret one person's responses toward another individual. Rather than asking people to interact in a "live" situation, I would like you to observe videotaped interactions which occur in various social situations. As the tape describes each situation, imagine that you are actually sitting in the room with the two people on the screen and that you are observing their interaction. For example, if the interaction is described as occurring between a woman and her husband, imagine that you are in the room observing their interaction. At the conclusion of the scene, I would like you to complete a one page questionnaire regarding your perceptions and interpretations of the interaction. First, I would like you to rate the scene according to how you perceive the interaction. Next, I want you to answer some questions regarding your interpretation of the cause of the interaction. That is, if you had witnessed this interaction occur, what do you think would have caused it? While the interaction may have many causes, I want you to pick only one--the major cause of this interaction if you had observed it. Also, I would like you to answer some questions about this cause. You will be given approximately 1-1/2 minutes to complete the questionnaire. When you have finished, turn to the next questionnaire and wait for the next interaction to begin. Are there any questions?

Remember, each interaction occurs between two other people, not yourself, in the room with you. Whatever the person says is not directed toward you, but to the other person on the screen. Let's begin. (Videotape recorder will be activated and the experimenter will move to the back of the room. Following the conclusion of the

other-related scenes, the experimenter will explain the next group of videotaped interactions.)

Now I would like you to observe another group of videotaped interactions. However, this time I am interested in how you perceive and interpret another person's responses to you. As the tape describes each situation, imagine that you are actually sitting in the room with the person on the screen and that you are directly involved in the interaction. For example, if the interaction is described as occurring between you and your husband, imagine that the person on the screen is your husband (whether you are married or not) and that he is interacting with you. At the conclusion of the scene, I again would like you to complete a one page questionnaire regarding your perceptions and interpretations of the interaction. As before, I would like you to rate the scene according to how you perceive the interaction. Next, I want you to answer some questions regarding your interpretation of the cause of this interaction. That is, if such an interaction happened to you, what do you think would have caused it? While the interaction may have many causes, I want you to pick only one--the major cause of this interaction if it happened to you. Also, I would like you to answer some questions about this cause. You will be given approximately 1-1/2 minutes to complete the questionnaire. When you have finished, turn to the next questionnaire and wait for the next interaction to begin. Are there any questions?

Remember, as each person appears on the screen, imagine that you are actually in the room with this person and that you are interacting with him. Whatever the person says will be spoken directly to you.

Let's begin. (Videotape recorder will be activated and the experimenter will move to the back of the room.)

APPENDIX G

CONSENT FORM

## PARTICIPANT'S CONSENT STATEMENT

I, \_\_\_\_\_ voluntarily consent to participate as a research subject in the investigation entitle, "Perception of Social Interactions," the purpose of which has been explained to me by David Olson.

I understand that I will be asked to observe videotaped interactions and to complete several questionnaires related to this material. I further understand that this information will in every way be anonymous and reported only as group data.

I confirm that this consent is voluntary and I understand that I may withdraw from the study at any time and continue to receive extra credit.

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Signature of Participant

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Date

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Signature of Witness

APPENDIX H

MEAN ATTRIBUTIONAL RATINGS OF POSITIVE, NEGATIVE,  
AND NEUTRAL SOCIAL EVENTS IN THE SELF AND  
OTHER CONDITIONS FOR DEPRESSED AND  
NONDEPRESSED SUBJECTS

TABLE IX  
 MEAN ATTRIBUTIONAL RATINGS FOR ALL  
 EXPERIMENTAL CONDITIONS

Group	Attributional Measures <sup>†</sup>			
	Internality	Stability	Globality	Composite
<u>Self Condition</u>				
Depressed				
Positive	7.78	7.28	7.30	7.45
Negative	6.08	5.62	6.03	5.90
Neutral	5.07	6.39	5.05	5.50
Nondepressed				
Positive	7.52	7.33	7.15	7.33
Negative	5.56	5.50	5.36	5.52
Neutral	4.94	5.86	4.68	5.15
<u>Other Condition</u>				
Depressed				
Positive	7.97	7.25	7.06	7.42
Negative	5.99	6.17	6.21	6.12
Neutral	4.74	6.14	5.18	5.35
Nondepressed				
Positive	7.83	7.14	6.79	7.25
Negative	5.33	5.93	6.23	5.83
Neutral	5.17	5.96	4.61	5.26

<sup>†</sup>Means of nine-point scales; higher scores indicate greater internality, stability, or globality.



APPENDIX I

ANALYSES OF VARIANCE OF THE INTERNALITY,  
STABILITY, GLOBALITY, AND COMPOSITE  
ATTRIBUTIONAL SCALES

TABLE X  
ANALYSIS OF VARIANCE OF THE INTERNALITY  
MEASURE

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
A (Group)	4.480	1	4.480	1.24
Subjects w/grps.	230.929	64	3.608	
B (Category)	550.541	2	275.270	150.15*
A x B	8.914	2	4.457	2.43
B x Subjects w/grps.	234.659	128	1.833	
C (Condition)	0.020	1	0.02	0.02
A x C	0.773	1	0.773	0.95
C x Subjects w/grps.	51.941	64	0.816	
B x C	2.931	2	1.466	2.01
A x B x C	2.028	2	1.014	1.39
B x C x Subjects w/grps.	93.452	128	0.730	

\*p < .0001

TABLE XI  
ANALYSIS OF VARIANCE OF THE STABILITY  
MEASURE

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
A (Group)	3.458	1	3.458	1.10
Subjects w/grps.	201.901	64	3.158	
B (Category)	155.099	2	77.495	52.58**
A x B	1.738	2	0.869	0.59
B x Subjects w/grps.	188.791	128	1.475	
C (Condition)	0.988	1	0.988	1.36
A x C	0.007	1	0.007	0.01
C x Subjects w/grps.	46.632	64	0.729	
B x C	7.589	2	3.794	6.46*
A x B x C	1.326	2	0.663	1.13
B x C x Subjects w/grps.	75.150	128	0.587	

\*p < .01

\*\*p < .0001

TABLE XII  
ANALYSIS OF VARIANCE OF THE GLOBALITY  
MEASURE

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
A (Group)	11.255	1	11.255	1.95
A x Subjects w/grps.	368.670	64	5.760	
B (Category)	318.633	2	159.316	76.89**
A x B	1.138	2	0.569	0.27
B x Subjects w/grps.	265.212	128	2.072	
C (Condition)	0.696	1	0.696	0.69
A x C	0.368	1	0.368	0.36
C x Subjects w/grps.	64.694	64	1.011	
B x C	11.480	2	5.740	7.59*
A x B x C	3.989	2	1.994	2.64
B x C x Subjects w/grps.	96.790	128	0.756	

\*p < .001

\*\*p < .0001

TABLE XIII  
ANALYSIS OF VARIANCE OF THE COMPOSITE  
MEASURE

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
A (Group)	5.559	1	5.559	3.45
A x Subjects w/grps.	103.010	64	1.610	
B (Category)	298.264	2	149.132	142.85**
A x B	0.602	2	0.301	0.29
B x Subjects w/grps.	133.625	128	1.044	
C (Condition)	0.415	1	0.415	1.41
A x C	18.790	64	0.294	
B x C	2.021	2	1.010	3.31*
A x B x C	0.383	2	0.192	0.63
B x C x Subjects w/grps.	39.057	128	0.305	

\*p < .05

\*\*p < .0001

APPENDIX J

MEAN RATINGS TABLES FOR THE INITIAL PERCEPTION AND OVERALL EVALUATION MEASURES

TABLE XIV  
 MEAN RATINGS FOR THE INITIAL PERCEPTION MEASURE FOR DEPRESSED AND NONDEPRESSED SUBJECTS IN ALL EXPERIMENTAL CONDITIONS<sup>+</sup>

Group	Category		
	Positive	Negative	Neutral
Depressed			
Self	8.72	1.85	5.86
Other	8.60	1.85	6.03
Nondepressed			
Self	8.85	1.82	6.16
Other	8.75	1.60	6.33

<sup>+</sup>Means of nine-point scales; higher scores indicate a more positive initial perception.

TABLE XV  
 MEAN RATINGS FOR THE OVERALL EVALUATION MEASURE FOR DEPRESSED AND NONDEPRESSED SUBJECTS IN THE SELF AND OTHER CONDITIONS<sup>+</sup>

Group	Condition	
	Self	Other
Depressed	5.88	6.24
Nondepressed	6.58	6.58

<sup>+</sup>Means of nine-point scales; higher scores indicate a more positive overall evaluation.

APPENDIX K

ANALYSIS OF VARIANCE TABLE FOR THE INITIAL  
PERCEPTION MEASURE



TABLE XVI  
ANALYSIS OF VARIANCE FOR INITIAL  
PERCEPTION RATINGS

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
A	1.00	1	1.00	0.78
Subjects w/grps.	82.83	64	1.29	
B	3250.42	2	1625.21	1366.38**
A x B	3.33	2	1.66	1.40
B x Subjects w/grps.	152.25	128	1.19	
C	0.03	1	0.03	0.14
A x C	0.11	1	0.11	0.52
C x Subjects w/grps.	13.57	64	0.21	
B x C	1.75	2	0.88	4.54*
A x B x C	0.29	2	0.14	0.76
B x C x Subjects w/grps.	24.69	128	0.19	

\*p < .01

\*\*p < .0001

APPENDIX L

ANALYSIS OF VARIANCE TABLE OF OVERALL  
EVALUATION MEASURE

TABLE XVII  
ANALYSIS OF VARIANCE OF THE OVERALL  
EVALUATION MEASURE

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
A (Group)	8.76	1	8.76	3.36
Subjects w/grps.	166.88	64	2.61	
C (Condition)	1.09	1	1.09	1.19
A x C		1	1.09	1.19
A x C x Subjects w/grps.	58.82	64	0.92	

VITA

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Candidate for the Degree of

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