THE TEMPORAL STABILITY OF SOCIAL RESPONSES
TO DEPRESSED AND NONDEPRESSED INDIVIDUALS

by

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ABSTRACT

The purpose of this study was to replicate and extend the findings of previous research addressing Coyne's (1976a) interactional model of depression. The nature and temporal stability of the social responses elicited by mildly depressed and nondepressed individuals were examined. One hundred and thirty-five female undergraduate volunteers were assigned, on the basis of Beck Depression Inventory scores to groups of depressed and nondepressed targets and nondepressed subjects. At Time 1, mildly depressed targets and nondepressed targets were randomly paired with individuals from the subject group. Measures of pre-interaction mood were taken, and each target-subject dyad carried out a 5-minute videotaped "getting acquainted" conversation. Following the conversation, the subject in each dyad completed questionnaires assessing self-reported reactions to her target partner.

Approximately 3 weeks later, targets returned for a second (i.e., Time 2) interaction. Depression levels were reassessed at this time and targets were divided into three groups: those who were depressed at Time 1 and remained depressed at Time 2 (n = 15), those who were nondepressed at Time 1 and remained nondepressed at Time 2 (n = 15), and those who were depressed at one time and nondepressed at the other time (n = 15). On this second occasion, targets were paired with new randomly assigned subjects; the procedures followed were identical to those at Time 1. Within- and between-times analyses were carried out on subjects' verbal and nonverbal conversational responses, as well as on their post-interaction self-reports of emotional and cognitive responses to their partners. Results were not supportive of Coyne's interactional model of depression and did not replicate the results of previous investigations. There were only minor differences in subjects'
responses to groups of depressed and nondepressed targets at Time 1 and across the two testing occasions. Depressed individuals were not responded to in a more negative fashion than were nondepressed individuals in terms of observed verbal and nonverbal behaviors or self-reported reactions. Results of this investigation lead to the conclusion that social responses to mildly depressed and nondepressed target groups are essentially the same, and that these responses do not change over a 3-week interval, even though the moods of target individuals may change. The validity of laboratory investigations as tests of Coyne's interactional model is questioned, and a "developing relationships" approach to assessing interactional patterns of depressed and nondepressed individuals is proposed.
<table>
<thead>
<tr>
<th>Table of Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title Page</td>
<td>i</td>
</tr>
<tr>
<td>Abstract</td>
<td>ii</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>iv</td>
</tr>
<tr>
<td>List of Tables</td>
<td>v</td>
</tr>
<tr>
<td>List of Figures</td>
<td>vi</td>
</tr>
<tr>
<td>List of Appendices</td>
<td>vii</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>viii</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Method</td>
<td>15</td>
</tr>
<tr>
<td>Results</td>
<td>22</td>
</tr>
<tr>
<td>Discussion</td>
<td>38</td>
</tr>
<tr>
<td>References</td>
<td>53</td>
</tr>
<tr>
<td>Appendix A</td>
<td>56</td>
</tr>
<tr>
<td>Appendix B</td>
<td>58</td>
</tr>
<tr>
<td>Appendix C</td>
<td>61</td>
</tr>
<tr>
<td>Appendix D</td>
<td>63</td>
</tr>
<tr>
<td>Appendix E</td>
<td>68</td>
</tr>
<tr>
<td>Appendix F</td>
<td>71</td>
</tr>
</tbody>
</table>
## List of Tables

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Status of targets at Time 1 and Time 2</td>
<td>13</td>
</tr>
<tr>
<td>2.</td>
<td>Means and standard deviations for BDI scores of target and subject groups at Time 1 and Time 2</td>
<td>24</td>
</tr>
<tr>
<td>3.</td>
<td>Reliability coefficients of observational data from 14 interactions</td>
<td>25</td>
</tr>
<tr>
<td>4.</td>
<td>Means and standard deviations of MAACL change scores on the 3 MAACL subscales for subjects interacting with depressed and nondepressed target individuals at Time 1</td>
<td>27</td>
</tr>
<tr>
<td>5.</td>
<td>Pre- and post-interaction means and standard deviations on MAACL subscales for Time 1 and Time 2 subjects</td>
<td>31</td>
</tr>
<tr>
<td>6.</td>
<td>Means and standard deviations for subject groups on the Mistrusting, Inhibited, and Agreeable subscales of the IMI at Time 1 and Time 2</td>
<td>35</td>
</tr>
<tr>
<td>7.</td>
<td>Correlations between BDI scores of targets/subjects and subjects' responses</td>
<td>39</td>
</tr>
</tbody>
</table>
List of Figures

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Subject groups' mean pre-interaction scores on the Depression subscale of the MAACL at Time 1 and Time 2</td>
<td>32</td>
</tr>
<tr>
<td>2.</td>
<td>Subject groups' mean post-interaction scores on the Depression subscale of the MAACL at Time 1 and Time 2</td>
<td>34</td>
</tr>
</tbody>
</table>
# List of Appendices

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A</td>
<td>Consent form</td>
<td>56</td>
</tr>
<tr>
<td>Appendix B</td>
<td>The Beck Depression Inventory (BDI)</td>
<td>58</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Today form of the Multiple Affect and Adjective Checklist (MAACL)</td>
<td>61</td>
</tr>
<tr>
<td>Appendix D</td>
<td>The Impact Message Inventory (IMI)</td>
<td>63</td>
</tr>
<tr>
<td>Appendix E</td>
<td>The Future Interaction Questionnaire</td>
<td>68</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Bipolar adjective rating scales</td>
<td>71</td>
</tr>
</tbody>
</table>
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INTRODUCTION

Over the past decade, there has been a growing recognition of the importance of studying interpersonal factors in depression. Coyne (1976a, 1976b) proposed an interactional model of depression in which the responses of others to the depressed individual are viewed as playing a critical role in the maintenance and exacerbation of depressive behavior. According to Coyne, depression occurs in response to social stresses involving a "disruption of the social space in which the person obtains support and validation for his experience" (Coyne, 1976a, p. 33). Following such a disruption, the individual begins to display depressive behavior in an attempt to elicit needed support and reassurance. Although initial communications of the depressed individual tend to elicit supportive responses, persistent expressions of symptoms become increasingly aversive to others, and over time may evoke indirect hostility and non-genuine expressions of support. The depressed individual senses this rejection and displays more symptoms in efforts to draw forth supportive feedback from others. Not surprisingly, these efforts result in increasingly negative reactions and greater rejection from the social environment. Consequently, additional depressive symptomatology is displayed by the depressed individual. Thus, according to Coyne, an individual need only begin to display depressive behavior in order to initiate a downward depressive spiral, described as a "mutually causative, deviation amplifying process in the interaction of the depressed person with his environment" (Coyne, 1976a, p. 29). Once this process has begun, it is very difficult to abort. The self-perpetuating interactional system slips beyond the control of the participants, ultimately resulting in others either withdrawing from the depressed individual, or having him withdrawn through hospitalization (Coyne, 1976a).
Coyne (1976b) conducted a study providing some initial support for his proposed relationship between depression and the responses of others. In this investigation, normal female undergraduate students participated in 20 minute telephone conversations with either depressed or nondepressed psychiatric patient or normal control targets. As predicted, depressed targets elicited significantly more negative mood and rejection in their partners than did nondepressed controls. However, observer rated measures of subjects' conversational behavior (i.e., activity level, approval responses, hope statements, and genuineness) did not distinguish between responses to depressed and nondepressed targets. Using these same measures, no specific conversational behaviors emitted by depressed targets were identified which could account for the negative mood induction and rejection these individuals elicited. Thus, on the basis of these results, Coyne concluded that negative mood induction is the critical mediator in the rejection of depressed individuals. He was unable, though, to draw any conclusions regarding differences in the behavior of depressed and nondepressed individuals which could account for the differential mood induction and rejection of depressed individuals. Coyne proposed that the critical difference in depressed and nondepressed individuals' behavior might be elucidated by a careful assessment of the verbal content of their responses. More specifically, he suggested that the critical factors may be depressed individuals' tendency toward excessive self-disclosure and/or focusing on inherently depressing topics.

There have been a number of more recent investigations empirically testing various aspects of Coyne's interactional model. These studies have involved attempts to replicate and extend Coyne's (1976b) findings of negative social responses to depressed individuals. Within this general framework, the focus has been on two related problems. First, researchers have attempted to verify
Coyne's proposed mediating role of mood induction in the negative social responses to depressed individuals. Second, attempts have been made to identify the specific behaviors of these individuals which are responsible for eliciting negative social responses.

Hammen and Peters (1978) used an innovative procedure to investigate social responses to depression and to determine if verbal content of depressed individuals' behavior is the critical factor in their elicitation of negative responses. In their study, dyads consisting of same and opposite sex college students carried out brief 5 minute interactions over an intercom system. In each dyad, one subject was assigned the role of interviewer and was given a specific list of questions to ask his/her partner. The other subject was instructed to enact either a depressed or nondepressed role. Content of the actors' responses was strictly controlled. Depressed and nondepressed actors revealed identical personal problems in identical sequence; their roles differed only in terms of the presence or absence of characteristically depressed affect and attitudes. Consistent with Coyne's findings, depressed actors, relative to nondepressed actors, were more strongly rejected and elicited significantly more depression in their partners. Thus, Hammen and Peters' results suggest that content variables (e.g., excessive self-disclosure and choice of depressing topics, as suggested by Coyne, 1976b) need not be viewed as critical for depressed individuals' elicitation of negative social responses.

Winer, Bonner, Blaney, and Murray (1981) controlled content variables in order to assess the social impact of depressive behavior. Initially, undergraduate subjects read one of six transcripts simulating an encounter with another volunteer student. Four of the transcripts depicted different types of depressed personalities describing identical series of adverse
events. The first displayed only the most common features of depression (i.e., sadness, low self-esteem, hopelessness, and fatigue). Each of the remaining three depressed personalities displayed these basic features plus one other type of symptom (i.e., guilt, anger, or dependence). Additionally, there were two control transcripts—one simulating a nondepressed personality describing the same series of adverse events, and the other simulating a nondepressed personality describing a series of positive events. Subjects completed measures of mood and acceptance/rejection after each of two imagined interactions with their given target.

Following the initial encounter, results were in the direction of greater mood induction and rejection elicited by depressed target groups; all four of the depressed target groups had similarly elevated scores. Following the second encounter, the four depressed groups were clearly differentiated from the two control groups on both induced mood and rejection. On the basis of these results, Winer et al. (1981) concluded that the basic features of depression, and not reports of adverse events or associated anger, guilt, or dependence, were critical for eliciting negative responses from others. Further, consistent with the interactional model (Coyne, 1976a), the continued expression of depressive symptoms in a repeat encounter resulted in a more negative rejecting response from others.

Howes and Hokanson (1979) conducted an investigation to isolate subjects' responses to depressive interpersonal behavior per se from responses due to general deficits in functioning. Undergraduate subjects interacted with a same sex confederate for seven minutes under the pretense of waiting for an experiment to begin. Subjects interacted with confederates enacting one of three different roles—depressed (depressed interpersonal behavior, reports of serious deficits in functioning), physically ill (normal interpersonal
behavior, reports of serious deficits in functioning due to illness), and normal (normal interpersonal behavior, reports of few deficits in functioning). No induced mood differences were found between groups. Nevertheless, depressed confederates were more rejected, and were described in more negative terms and as having greater interpersonal impact than were confederates of the other two types. As well, group differences were noted in observer ratings of subjects' conversational behavior. Subjects interacting with depressed confederates responded with a higher rate of silences and directly negative comments, and a lower rate of overall verbal responding. The number of expressions of direct support made toward depressed confederates was equal to the number directed toward physically ill confederates, but greater than that directed toward normal confederates.

Howes and Hokanson present these results as supportive of a general negative social response to depressive interpersonal behavior. On the basis of their findings of no differential mood induction, they challenged Coyne's (1976b) conclusion regarding the mediating effect of negative mood induction in social responding to depressed individuals. Instead, they propose a more "cognitive mediational process" whereby others' responses are mediated by initial negative perceptions and assessments of the depressed individual.

Gotlib and Robinson (1982) examined social responses to depressive behavior in a college student sample of mildly depressed and nondepressed females. Following 15 minute face-to face interactions, subjects who interacted with depressed or nondepressed targets did not differ on either self-reported mood or acceptance/rejection of their partner. Group differences were apparent, however, on observer ratings of a number of verbal and nonverbal conversational behaviors. Subjects who interacted with depressed targets smiled less often, displayed less arousal and pleasantness
in their facial expressions, talked about less positive and more negative topics, and made fewer statements of direct support to their partners. Subsequent analyses revealed differences in the verbal and nonverbal behavior of depressed and nondepressed target individuals. Depressed targets talked about more negative content and offered fewer statements of direct support to their partners than did nondepressed targets. As well, relative to nondepressed targets, depressed targets smiled less often, appeared less pleasant and aroused, used a greater number of "adaptors" (Ekman & Friesen, 1974), and had more monotonous speech.

Thus, in their examination of the effects of direct face-to-face interactions with mildly depressed individuals, Gotlib and Robinson supported the hypothesis that depressed individuals elicit qualitatively different conversational responses from others than do nondepressed individuals. As well, they identified potentially important differences in the conversational behaviors of depressed and nondepressed individuals. A number of the observed subject and target group differences were evident in the first 3 minutes of the interactions. However, on self-report measures, subjects who had conversed with depressed individuals did not report greater mood induction or rejection of their partner than did those paired with nondepressed individuals. It is possible that procedural variables (i.e., relatively lengthy face-to-face contact) could have attenuated subjects' overall post-interaction negative reactions to depressed individuals. That is, it may be less dissonance-arousing to reject one's partner if the time spent together has been very brief, particularly if no direct contact has been involved (e.g., Howes & Hokanson, 1979; Hammen & Peters, 1978).

Strack and Coyne (1983) conducted an investigation of social responses to mildly depressed and nondepressed female university students using procedures
very similar to those of Gotlib and Robinson. In this case, however, both mood and rejection effects were found. Following 15 minute interactions, subjects paired with depressed targets were more anxious, depressed, and hostile than were those subjects paired with nondepresed targets. Further, the depressed targets were rejected by their partners. Contrary to Strack and Coyne's hypothesis, subjects who were led to believe that their responses would be made known to their target partners were no less likely to provide negative rejecting responses than were subjects who believed their responses to be confidential. No assessment of subjects' or targets verbal and nonverbal behavior was conducted.

In the most recent study, and only direct replication of Coyne's (1976a) procedure, King and Heller (1984) found no differences in subjects' responses to depressed and nondepressed target groups in terms of either induced mood or social rejection effects. Subjects did, however, perceive the depressed target groups as being sadder and having more problems than the nondepressed target groups. It should be noted that, unlike in Coyne's original study, King and Heller used only subjects' self-reports to assess acceptance/rejection of targets. No attempt was made to assess verbal and nonverbal behavior of subjects or targets.

Thus, with the exception of King and Heller's recent study, results of the preceding investigations of social responses to depression are generally supportive of Coyne's (1976a, 1976b) hypothesized negative social response to depressed individuals. The robustness of these findings is, however, somewhat questionable, and the processes through which these responses are elicited remain insufficiently understood. According to Coyne (1976b), negative mood induction is the critical mediator in the rejection of depressed individuals. While the notion of mood induction as a mediator of social response does make
intuitive sense, its validity is questionable. First, investigations to date have not consistently reported the occurrence of induced mood effects, or even the necessity of these effects for the rejection of depressed individuals. Of more serious consequence, in all these investigations, mood induction effects were assessed simply by having subjects complete a post-assessment mood inventory. If subjects paired with depressed targets reported a more negative mood state than did subjects paired with nondepressed targets, mood induction was said to have occurred. Unfortunately, with this post-test only design, one cannot rule out the possibility that the reported "induced" mood effects are in actuality simply reflective of initial group differences in mood. An adequate test of the mood induction hypothesis would require pre- and post-interaction assessments of the subjects' mood.

Further, although there is general agreement that it is the interpersonal behavior of depressed individuals which elicits negative social responses, the specific variables responsible remain elusive. Coyne's (1976a) model implies that the critical differences in the behavior of depressed and nondepressed individuals should be easily identifiable, but this was not the case in his early study (Coyne, 1976b). Although depressed individuals were rejected by others, Coyne was unable to distinguish between depressed and nondepressed individuals on any of the measures of conversational behavior. Youngren and Lewinsohn (1980) were equally unsuccessful in their attempts to identify problematic interpersonal behavior uniquely associated with depression. Although they found that observers rated depressed individuals more negatively than others on global measures of interpersonal style, they could not identify any specific depression-related deficits on any of their measures of verbal and nonverbal behavior. More recently, Gotlib and Robinson (1982) were able to identify differences in the verbal and nonverbal conversational behavior of
depressed individuals relative to nondepressed individuals. However, they were unable to specify which, if any, of these behaviors were responsible for negative social responses (i.e., verbal and nonverbal conversational responses).

At present, it is unclear whether the negative social responses to depressed individuals are elicited by depressive symptomatology, as suggested by Coyne (1976a), or whether they occur in response to more stable, enduring characteristics of depressed individuals. Lewinsohn's Behavioral Theory of Depression (1974) implicates relatively stable social skills deficits as a major reason for an individual receiving a low rate of positive reinforcement and/or a high rate of aversive experience in social interactions. Further, such unrewarding/punishing interactions are viewed as critical antecedents to depression. In a number of investigations, Lewinsohn and his colleagues (e.g., Libet & Lewinsohn, 1973; Lewinsohn & Shaffer, 1971; Lewinsohn, Weinstein, & Alper, 1970) have found depressed individuals as a group to be less socially skillful than nondepressed individuals on a variety of measures. Unfortunately, the nature of these investigations has not permitted an adequate assessment of the stability, or causal role, of social skills deficits in depression. It is possible that the obtained social skills deficits are stable, perhaps preceding depressive episodes and even predisposing an individual to depression. However, it is equally possible that these deficits arise as secondary symptoms of a depressive episode and dissipate with clinical improvement. In recent writings, Lewinsohn intimates that the latter possibility is likely the case (Lewinsohn & Arconad, 1981). Further, Coyne (1976a) points out that while depressed individuals may in fact lack social skills relative to nondepressed individuals, many of the observed deficits in the behavior of depressed individuals (e.g., narrow interpersonal...
range, few interpersonal behaviors emitted) may simply be due to the fact that fewer people are willing to interact with these individuals. Longitudinal studies addressing the relationship between interpersonal behavior and depression are required in order to directly assess these possibilities.

Gotlib and Beatty (1983) provide preliminary support for the operation of a relatively stable characteristic—depressive attributional style—in the elicitation of negative rejecting social responses. Depressive attributional style refers to an explanatory style in which negative outcomes are attributed to, or explained by, internal, stable, and global causes. Gotlib and Beatty investigated reactions to hypothetical depressed and nondepressed targets who either did, or did not, display a depressive attributional style. Results indicated that the addition of a depressive attributional style did not affect the negative reactions already elicited by overtly symptomatic depressed targets. However, the presence of a depressive attributional style in normal individuals resulted in the elicitation of more negative social responses. Gotlib and Beatty reasoned that since this characteristic played a role in eliciting negative social responses to nondepressed individuals, it should, according to an interactional formulation, predispose such individuals to depression. Thus, they suggest that Coyne's (1976a) interactional model be extended from exclusively a depression maintenance/enhancement model to one which can also account for the etiology of the disorder. This is an interesting idea which is clearly in need of further investigation. Gotlib and Beatty's conclusions were based solely on subjects' reactions to an isolated imagined encounter with a hypothetical target individual. Thus, although they implicate depressive attributional style as a determinant of social responses, conclusions cannot be drawn regarding either the stability of the attributional style displayed by an individual, or the stability of the
social reactions elicited by such a style. Furthermore, while displays of a depressive attributional style may in fact lead to negative social reactions, it has not been determined if this does, as Coyne's model would suggest, lead to depression. Again, longitudinal studies are required.

Clarification of the stability of social responses to depressed individuals carries important implications for our understanding of the characteristics/behaviors of depressed individuals which are responsible for eliciting negative responses from others, and more generally for Coyne's (1976a, 1976b) interactional model of depression. If individuals are found to receive negative rejecting social responses when in a depressed state, and more positive accepting responses when in a nondepressed state, it would appear that some nonstable behavior is responsible for eliciting negative responses from others. This would be consistent with Coyne's (1976a) proposal that the depressive symptomatology is the eliciting behavior. However, such findings would present other troublesome implications for Coyne's interactional model. If the depressive episodes are found to be time-limited, and the elicitation of negative social responses is found to be restricted to periods of depression, it would then seem that initial displays of depressed behavior and the resulting negative responses of others are less likely to lead toward the impenetrable downward depressive spiral that Coyne would have us believe.

In contrast, if individuals are found to elicit negative rejecting social responses when in a depressed state as well as when in a nondepressed state, Coyne's (1976a) statement that depressive symptomatology, per se, is primarily responsible for eliciting the negative responses would appear to be inaccurate. Instead, such results would suggest that the negative responses are elicited by an enduring characteristic of the individual—one that is not
influenced by depressed or nondepressed status. In terms of Coyne's interactional model, it would be difficult on the basis of such a finding to assess the causal role of the responses of others in the development of depression. The demonstration of individuals in a nondepressed state eliciting negative social responses without the resultant depressive spiral would seem to call into question the causal role of responses of others in depression. Nevertheless, one cannot rule out the possibility that even if an individual is not falling prey to the depressive spiral at the time of the assessment, his/her problematic interpersonal behavior is acting as a vulnerability factor to depression. Prospective studies would be required in order to adequately assess this possibility.

The purpose of the present investigation was to examine the nature and temporal stability of the social responses elicited by depressed and nondepressed individuals. At Time 1, two groups of targets (mildly depressed and nondepressed university students) interacted in dyads with nondepressed subjects (university students). At Time 2 (3 weeks later) the same targets again carried out dyadic interactions with new, randomly assigned nondepressed subjects. Depression levels of targets were reassessed at this time. Some of the targets were depressed at Time 1 and remained depressed at Time 2 (D-D targets). Others were nondepressed at both Time 1 and Time 2 (Nd-Nd targets). Finally, others were depressed on one occasion and not on the other occasion (D-Nd targets). For the purpose of data analyses, reactions elicited by D-Nd targets when they were in a depressed state were treated as Time 1 reactions, and the reactions they elicited when in a nondepressed state were treated as Time 2 reactions. Fifteen targets were included in each group (see Table 1). Thus, this study included a modified replication of Gotlib and Robinson's (1982) procedure comparing social responses to depressed and
Table 1

Status of Targets at Time 1 and Time 2

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<thead>
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<th>Abbreviation</th>
<th>Time 1</th>
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<tr>
<td>D–D</td>
<td>Depressed</td>
<td>Depressed</td>
</tr>
<tr>
<td>Nd–Nd</td>
<td>Nondepressed</td>
<td>Nondepressed</td>
</tr>
<tr>
<td>D–Nd</td>
<td>Depressed</td>
<td>Nondepressed</td>
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</tbody>
</table>

\(^a_n = 15\) for each group
nondepressed targets, although in the present study interactions were of a shorter duration. Further, this study served as an attempt to clarify whether the negative responses elicited by depressed individuals (a) occur only when these individuals are in a depressed state, and therefore are likely elicited by depressive symptomatology, or (b) are stable—occurring regardless of depressed or nondepressed status, and therefore are likely elicited by a more stable characteristic/behavior of these individuals. Since the present study does not include a predepression assessment of reactions to the majority of depressed targets, a finding of negative responses to D-Nd targets in both their Time 1 and Time 2 interactions would not be interpretable with certainty. Stable negative responses would likely reflect a reaction to some stable characteristic(s) that preceded the depressive episode. Alternatively, they could occur in response to some enduring characteristic/behavior that arose with, or because of, the depressive episode. This latter possibility would seem to be more plausible in the case of individuals who have gone through a major depressive episode than in the case of university students who have temporarily experienced mild depression.

On the basis of Coyne's interactional model and related research, the following hypotheses were formulated. It was predicted that at Time 1, subjects interacting with depressed targets would respond more negatively than subjects interacting with nondepressed targets. Specifically, relative to subjects paired with nondepressed targets, subjects interacting with depressed targets were expected to display more negative and less positive verbal and nonverbal behavior, be more rejecting of their partners, and describe their partners in more negative terms and as having a greater interpersonal impact. As well, subjects interacting with depressed targets were expected to report a shift towards a more depressed, anxious, and hostile mood following the
interaction (as measured by pre-post interaction differences). No significant
differences were expected between the responses elicited by D-D and D-Nd
targets at Time 1.

Predictions for the follow-up phase of the study were in keeping with
Coyne's (1976a) suggestion that negative social responses are elicited by
depressive symptomatology. First, it was predicted that at Time 2, D-D
targets would elicit more negative reactions than either D-Nd or Nd-Nd
targets. No significant differences were expected in subjects' responses to
the D-Nd and Nd-Nd target groups at Time 2 on any of the behavioral or
self-report measures. Thus, when in a depression-free state, the D-Nd target
group was expected to elicit responses equally positive and accepting as those
elicted by the nondepressed target group. Further, it was hypothesized that
subjects' responses to D-D targets, and to Nd-Nd targets would not change
significantly from Time 1 to Time 2. In contrast, it was predicted that at
Time 2, subjects' responses to the D-Nd targets would be significantly less
negative/rejecting on all measures than were subjects' responses to these
targets at Time 1.

METHOD

Subjects

The sample consisted of 135 female undergraduate students at the
University of British Columbia. The experimenter entered undergraduate
psychology classes and briefly explained the nature of the experimental task
and time commitment required. Interested students were asked to sign a
consent form (see Appendix A) and to complete the Beck Depression Inventory
(BDI; Beck, Ward, Mendelsohn, Mock, & Erlbaugh, 1961; see Appendix B).
Further participation was arranged through telephone contact.

Students were assigned to depressed and nondepressed experimental groups
on the basis of BDI scores. Groups were as follows: (1) Depressed targets—this group consisted of 30 female undergraduates who evidenced at least a mild level of depression as defined by a score of 10 or greater on the BDI. One hundred and five nondepressed individuals, defined as receiving a score of 8 or less on the BDI, were randomly assigned to one of the following groups. (2) Nondepressed targets—this group consisted of 15 nondepressed female undergraduates. (3) Nondepressed subjects—this group consisted of 90 nondepressed female undergraduates. On a random basis, 45 subjects in this group were selected and assigned to partake in dyadic interactions with depressed or nondepressed target individuals at Time 1. The remaining 45 nondepressed subjects took part in dyadic interactions with depressed or nondepressed target individuals at Time 2. Precautions were taken to ensure that the target and subject in each dyad did not know each other prior to participation in the study.

Apparatus

Dyads interacted in a room equipped with a coffee table, and 2 chairs approximately 3 feet apart and angled at 90 degrees from each other. Interactions were videotaped. Recording equipment consisted of a Hitachi video color camera (model VK-C830), a Hitachi Solid State video recorder (model VT-11AR), and a Sony color TV monitor used to view the records of the interactions.

Measures

Identical measures were used at Time 1 and Time 2. Measures of depression level and pre-interaction mood were administered to subjects and targets prior to the interaction. Following the interaction, measures of mood were again administered to subjects and targets. Subjects were also asked to complete post-interaction measures of the social impact of the interaction and
acceptance/rejection of the target. Videotapes of interactions were rated by trained observers for verbal and nonverbal behaviors of the subjects. As well, observers completed bipolar adjective ratings of subjects' mood, anxiety level, social skill, and friendliness.

**Depression level.** The self-report Beck Depression Inventory (BDI; Beck et al., 1961; Appendix B) was used to assess the number and severity of depressive symptoms. The respondent was instructed to complete the inventory in terms of how she had been feeling over the preceding week. For each question, she was to choose among several response options graded in terms of the severity of the symptom described.

Psychometric properties of the BDI are generally very good. Beck (1972) reports high internal consistency (Spearman-Brown corrected split-half reliability = .93; Kruskal-Wallis item-total correlations = .31 to .68). The BDI correlates significantly with other self-report measures of depression (including the MMPI-D scale, Zung's Self-Rating Depression Scale, and Lubin's Depression Adjective Check List), with clinician rating scales, and with a behavioral observation scale (see Rehm, 1976, 1981). Furthermore, the BDI is sensitive to symptom change (Rehm, 1981).

**Mood.** The 132 item Today form of the Multiple Affect Adjective Check List (MAACL; Zuckerman & Lubin, 1965; Appendix C) was used to assess mood. Scores on the MAACL's three subscales—Depression, Anxiety, and Hostility—were examined separately. This checklist has been used in a number of studies to assess the effects on mood of interacting with depressed and nondepressed targets (e.g., Gotlib & Robinson, 1982; Coyne, 1976).

The MAACL-Today form has been normed on college student and psychiatric samples. Internal reliability coefficients are significant and high ($r = .79$, .92, and .90 ($n = 46$) for anxiety, depression, and hostility, respectively).
As would be expected for a scale measuring day-to-day fluctuations in mood, test-retest correlations for psychiatric patients are high and significant, while those for normal college students are low and nonsignificant. MAACL subscale scores are highly correlated with related self-report measures and with observer ratings. Subscale scores have been demonstrated to be sensitive to a variety of manipulations—including threat of examination, perceptual isolation, and psychoactive drugs. Significant changes in subscale scores of college students over periods as brief as 20 minutes have been demonstrated in response to film and picture presentations (see Zuckerman & Lubin, 1965 for review).

Social Impact Variables

The Impact Message Inventory-Form II (IMI; Kiesler, Anchin, Perkins, Chirico, Kyle, & Federman, 1975, 1976; Appendix D) was administered to subjects following the interaction to assess the affective and cognitive impact of targets on subjects during dyadic interactions. This 90 item inventory was derived from Kiesler's communication theory of psychotherapy (Kiesler, Bernstein, & Anchin, 1977) and Lorr and McNair's (1967) Interpersonal Behavior Inventory. Scores are provided on 15 subscales that reflect 15 distinct interpersonal styles (Dominant, Competitive, Hostile, Mistrustful, Detached, Inhibited, Submissive, Succordant, Abasive, Deferent, Agreeable, Nurturant, Affiliative, Sociable, Exhibitionistic). The 15 subscales have been shown to have a high level of internal consistency reliability (mean coefficients range from .80 - .99). Each subscale is composed of six items describing possible reactions to another individual (e.g., "when I am with this person she makes me feel I should be cautious about what I say or do around her"), and subjects indicate how well the statement represents their reaction by responding on a scale of 1 (not at all)
to 4 (very much so). The score on each subscale is the mean of the responses on the six subscale items. A score indicating an individual's overall degree of interpersonal impact is derived by averaging together the 15 subscale scores.

Acceptance/rejection of target. The Future Interaction Questionnaire (Appendix E), developed by Winer, Bonner, Blaney, and Murray (1981), was used to assess subjects' willingness to engage in future interactions with targets. The questionnaire consists of 13 items (e.g., "Would you be willing to work on a job with this person?" "Would you like to sit next to this person on a 3-hour bus trip?") to be answered on a 9-point scale ranging from "definitely not/not at all" to "definitely yes/very much". Items were taken from similar measures used by Coyne (1976a), Youngren and Lewinsohn (1980), and Gotlib and Robinson (1982). In previous research, this questionnaire has been shown to be highly internally consistent (α = .96; Gotlib & Beatty, 1983).

Videotape Ratings

Ratings of behavior and mood were completed by two coders blind to: hypotheses of the study, group membership, and time of testing. In order to assess interrater reliability, a randomly selected set of 14 interactions (15.56% of the total) were rated by both coders.

Verbal behaviors of subjects were assessed using a system developed by Howes and Hokanson (1979) and used by Gotlib and Robinson (1982). Video recordings of the interaction between subject and target were divided into units; each unit consisting of a single response (i.e., sentence or equivalent) on the part of the subject. Responses were categorized on the basis of content. Categories consist of:

1. Direct support - reassuring, sympathetic or empathetic remarks or any positive appraisal of the target individual or her attributes.
2. Conversation maintenance, positive content - favourable descriptions other than of the target individual, assessment or prediction concerning self, hometown, weather, etc.

3. Conversation maintenance, neutral content - responses that have no evaluative content.

4. Conversation maintenance, negative content - negative evaluations other than of the target individual, descriptions or predictions concerning self, the experiment, school, etc.

5. Direct negative - punishing or insulting remarks or other expressions of displeasure or disapproval directly related to the target individual.

6. Silence - no verbal response to a target individual's statement or question (i.e., defined by a silence of 5 seconds or greater following target's statement).

Mean frequencies of each type of response according to condition (i.e., interaction with a depressed or nondepressed target at Time 1 and Time 2) were calculated. As well, participants' total number of verbal responses and silent responses were tallied for the purpose of making comparisons across conditions.

A number of nonverbal behaviors were assessed using a procedure developed by Youngren and Lewinsohn (1980), and used by Gotlib and Robinson (1982). Using a 10-second interval time-sampling procedure, subjects were assessed for: eye contact - proportion of intervals spent looking at the face of the target; smiling - mean rating based on a 3-point scale (1 = not smiling, 2 = slightly smiling, 3 = smiling fully or laughing); facial expression (pleasantness and arousal) - mean ratings based on a 7-point scale; and gestures - proportion of intervals using "illustrators and adaptors". Illustrators are defined as any gestures accompanying speech which demonstrate what the individual is verbally expressing. Adaptors are defined as any gestures which are unrelated to the individual's verbalization (I. Gotlib, personal communication, November 14, 1984).

Immediately following their viewing of an interaction, coders rated the
subject on four 7-point bipolar adjective rating scales assessing mood, anxiety level, social skill, and hostility/friendliness (see Appendix F).

Procedure

In the first phase of the study, the experimenter introduced both members of each dyad and seated them in the interaction room. Both members of the dyad completed the BDI and MAACL to assess level of depression and mood immediately prior to the interaction. Participants were told that the purpose of the study was to investigate the acquaintance process and that they would have five minutes in which to get acquainted. They were advised that their conversation would be videotaped. Participants were given an opportunity to ask questions, and were then left alone to converse for 5 minutes. Following the interaction, subject and target individuals were seated in separate locations in the large room in which the interactions took place. The subject completed the MAACL, the IMI, and the Future Interaction Questionnaire. The subject was then privately debriefed, questions were answered, and she was thanked for participating in the study. The target's questions were answered and she was thanked for her participation; however, debriefing did not take place at this point. Instead, the target was asked to return 3 weeks later to take part in the second phase of the study. Upon returning, her depression level was reassessed using the BDI. Individuals from the depressed target group who remained depressed at Time 2 (i.e., D-D targets) and those whose BDI scores dropped to 8 or below (i.e., D-Nd targets) were asked to partake in a second dyadic interaction with a new partner. Likewise, individuals from the nondepressed target group who remained nondepressed (i.e., Nd-Nd targets) and those who shifted to depressed status (D-Nd targets) completed the second phase of the study. The procedures followed in the second phase of the study were identical to those in the first phase. Following the completion of
post-interaction measures, both target and subject were completely debriefed. Any questions concerning the study were answered, and participants were thanked for taking part.

Although 135 students (45 targets and 105 subjects) were included in the final version of this study, an additional 100 students (44 targets and 60 subjects) participated on at least one occasion but were then eliminated from the study because they did not satisfy research design criteria. Reasons for eliminating these participants included: targets receiving a BDI score of 9; depressed targets receiving BDI scores suggestive of severe depression—which would have made the depressed target group too dissimilar to that in Gotlib and Robinson's (1982) study to enable reasonable comparisons between the two studies; both members of a dyad receiving scores of 10 or above on the BDI; an excess of dyads in which the target was depressed—necessitating the random elimination of a number of these dyads.

RESULTS

Initially, analyses of variance (ANOVAs) were conducted to compare BDI scores of target and subject groups, and interrater reliability coefficients were computed for the two observers' ratings of the subjects' verbal and nonverbal behaviors in the 14 videotaped interactions. Three major sets of analyses were then carried out. First, differences in reactions to the depressed and nondepressed target groups at Time 1 were assessed using a series of 2 group multivariate analyses of variance (MANOVAs), followed by ANOVAs. Second, analyses of the stability of reactions to the 3 target groups over time were conducted using a series of 3(group) by 2(time) MANOVAs, followed by ANOVAs. The .05 level of significance was used throughout. For the purpose of comparing results with those of previous investigations, even in cases in which no overall multivariate effect was found, the significance/nonsignificance of following ANOVAs will be reported. Finally, a set of
correlational tests of significance were conducted in order to examine the relationship between target and subject individuals' levels of depression and the verbal and nonverbal responses they elicited.

Means and standard deviations of target and subject groups' BDI scores are presented in Table 2. ANOVAs were carried out in order to compare BDI scores of the depressed and nondepressed target groups, as well as to compare the BDI scores of the nondepressed subject groups within and across times. The ANOVA on target groups' BDI scores revealed significant differences in BDI scores across groups, $F(2, 84) = 133.52, p < .01$; and across times, $F(1, 84) = 23.36, p < .001$. Further, there was a significant group by time interaction, $F(2, 84) = 15.92, p < .001$. This interaction can be accounted for by the significant drop in BDI scores of individuals in the D-Nd target group. The ANOVA on subject groups' BDI scores revealed no significant main effects for group, $F(2, 84) = .86, n.s.$; or time, $F(1, 84) = 2.88, n.s.$; however, there was a significant interaction between these variables, $F(2, 84) = 4.31, p < .05$. Given that all subjects' BDI scores were within the range indicating an absence of depression, this interaction can be considered to be devoid of practical significance.

Prior to the major sets of analyses, interrater reliabilities were computed for the observational data. Two coders, blind to the hypotheses of the study and to group membership of subjects, rated the behaviors of subjects from the videotaped interactions. A random sample of 14 interactions (15.56% of the total) were rated by both coders. Reliability coefficients for each of the 14 interactions are presented in Table 3. Reliability coefficients for the verbal behaviors, as well as for the nonverbal measures of eye contact, gestures (illustrators and adaptors), and pleasantness, were all satisfactory. Reliability coefficients for observers' ratings of subjects' arousal level, amount of smiling, mood, comfort, friendliness, and social
Table 2
Means and Standard Deviations for BDI Scores of Target and Subject Groups at Time 1 and Time 2

<table>
<thead>
<tr>
<th>Group</th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>D-D</td>
<td>15.20</td>
<td>2.81</td>
<td>15.00</td>
<td>3.36</td>
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<tr>
<td>Targets</td>
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<td>4.60</td>
<td>2.41</td>
<td>3.87</td>
</tr>
<tr>
<td></td>
<td>D-Nd</td>
<td>12.00</td>
<td>2.07</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td>Partners of D-D Targets</td>
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<td>1.35</td>
<td>3.87</td>
</tr>
<tr>
<td>Subjects</td>
<td>Partners of Nd-Nd Targets</td>
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<td>1.90</td>
<td>2.67</td>
</tr>
<tr>
<td></td>
<td>Partners of D-Nd Targets</td>
<td>2.20</td>
<td>2.34</td>
<td>2.33</td>
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Table 3

Reliability Coefficients for Observational Data from 14 Interactions

<table>
<thead>
<tr>
<th>Subject</th>
<th>Time</th>
<th>Verbal Measures&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Eye Contact&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Illustrators</th>
<th>Adaptors</th>
<th>Pleasantness&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Arousal&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Smiling&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Mood/Social Skill/Friendliness/Comfort</th>
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<tr>
<td>1</td>
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<td>.66</td>
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<td>.86</td>
<td>.74</td>
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<td>.80</td>
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<td>.83</td>
<td>.86</td>
<td>1.00</td>
<td>1.00</td>
<td>.80</td>
<td>.94</td>
<td>.26</td>
<td>.87</td>
</tr>
</tbody>
</table>

Note: Type of reliability coefficient:  

<sup>a</sup>Kappa;  

<sup>b</sup>Proportion Agreement  

<sup>c</sup>Pearson Correlation Coefficient (r)
skill were less satisfactory. Results based on these ratings must therefore be interpreted with caution.

The remaining analyses are presented in three sections. First, analyses of Time 1 differences in reactions to the depressed and nondepressed target groups are presented. It is this portion of the present investigation which serves as a slightly modified replication of Gotlib and Robinson's (1983) assessment of social responses to mildly depressed and nondepressed individuals. In these analyses, only the Time 1 data from the Nd-Nd and D-D groups were used. Data from the D-Nd group were included only in the second set of analyses. The second set of analyses address the stability of responses to depressed and nondepressed individuals over time. In the third section, correlations between depression levels and social responses are presented.

Time 1 Analyses

Self-Report Measures

Mood induction. A repeated measures 2(groups) by 2(pre-, post-interaction) MANOVA was used to assess pre- to post-interaction changes in MAACL scores of subject groups interacting with the depressed and nondepressed target groups (see Table 4). Results indicated no significant multivariate effects attributable to: depressed/nondepressed status of the targets these subject groups interacted with, $F(1, 28) = 1.15$, n.s.; differences in scores between pre- and post-interaction completions of the MAACL, $F(1, 28) = 1.19$, n.s.; or the interaction of group and pre- to post-interaction MAACLs, $F(1, 28) = .50$, n.s. Subsequent univariate $F$ tests revealed no significant main effects or interaction effects, for any of the 3 MAACL sub scale scores.

In order to more directly compare results of the present investigation with those of Gotlib and Robinson (1983), a 2(groups) MANOVA was conducted on post-interaction MAACL subscale scores of the two subject groups at Time 1.
Table 4
Means and Standard Deviations of MAACL Change Scores on the 3 MAACL Subscales for Subjects Interacting with Depressed and Nondepressed Target Individuals at Time 1

<table>
<thead>
<tr>
<th>Mood</th>
<th>Subjects with Depressed Target Individuals</th>
<th>Subjects with Nondepressed Target Individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Depression</td>
<td>.07</td>
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<tr>
<td>Anxiety</td>
<td>-.07</td>
<td>2.76</td>
</tr>
<tr>
<td>Hostility</td>
<td>.93</td>
<td>2.34</td>
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</tbody>
</table>
There was no multivariate effect attributable to subject group, \( F(1, 28) = .78, \) n.s. Univariate \( F \) tests revealed no significant differences between the two groups' post-interaction scores on any of the three MAACL subscales.

**Social impact.** Subjects' cognitive and affective reactions to depressed and nondepressed targets were compared using scores on the Impact Message Inventory (IMI). A 2(groups) MANOVA was used to assess differences in reactions to the two target groups on the 15 IMI subscales. The analysis revealed no significant multivariate effect attributable to status of the target groups, \( F(1, 28) = .99, \) n.s. Univariate \( F \) tests revealed no significant differences in subjects' responses to the depressed and nondepressed target groups on any of the 15 IMI subscales.

An overall impact score was derived from the responses of each subject by adding together their scores on each of the 15 IMI subscales and then dividing the sum by 15. A one-way ANOVA using these derived scores did not indicate any differences between the overall impact of the depressed and nondepressed target groups on their partners, \( F(1, 28) = .09, \) n.s.

**Acceptance/rejection of target.** A one-way ANOVA was carried out to assess subject groups' acceptance/rejection of their depressed or nondepressed partners. Each subject's raw summed score on the Future Interaction Questionnaire was used in this analysis. Results indicated no significant differences in reactions to the depressed and nondepressed target groups, \( F(1, 28) = .14, \) n.s. Thus, reactions to the depressed target group were no more or less accepting/rejecting than were responses to the nondepressed target group.

**Observational Measures**

**Verbal behavior.** A 2(groups) MANOVA was used to analyze the verbal observational data. Results indicated no multivariate effect attributable to the depressed/nondepressed status of the targets that the two subject groups
interacted with, $F(1, 28) = 1.36$, n.s. Univariate $F$ tests revealed no significant differences between subjects' responses to the groups of depressed and nondepressed targets on the total number of verbal responses, or on the specific verbal measures of direct support, conversation maintenance positive, conversation maintenance neutral, conversation maintenance negative, or direct negative. There was, however, a significant difference in the amount of silent responses emitted by subject groups toward the depressed and nondepressed target groups, $F(1, 28) = 4.07$, $p = .05$. Further inspection of the data revealed that individuals in the depressed target group received no silent responses from their partners (mean = .00, s.d. = .00), while individuals in the nondepressed target group received a very small proportion of silent responses (mean = .02, s.d. = .03). Thus, this difference appears to be of little practical significance.

**Nonverbal behavior.** A 2(groups) MANOVA was used to assess differences in nonverbal behavior of the subject groups toward the depressed and nondepressed target groups. Results indicated no multivariate effect attributable to depressed/nondepressed status of the target groups, $F(1, 28) = .68$, n.s. Univariate $F$ tests revealed no significant differences in subject groups' responses to the depressed and nondepressed target groups on any of the nonverbal measures, including: eye contact, gestures—illustrators and adaptors, smiling, pleasantness, and arousal.

**Bipolar adjective ratings.** A 2(groups) MANOVA was conducted to assess differences in observer ratings of subject groups' mood, anxiety level, social skill, and hostility/friendliness. Results indicated no multivariate effect attributable to depressed/nondepressed status of targets these subject groups were interacting with, $F(1, 28) = .31$, n.s. Univariate $F$ tests revealed no significant differences between the two subject groups on any of
the bipolar adjective ratings.

**Analyses of Stability Over Time**

**Self-Report Measures**

**Mood induction.** Pre- and post-interaction MAACL subscale scores for subject groups at Time 1 and Time 2 are presented in Table 5. A 3(groups) by 2(times) by 2(pre/post-interaction) MANOVA was conducted on MAACL scores, with a repeated measures analysis on the pre/post-interaction variable. Results indicated no multivariate effect attributable to subject group, $F(2, 84) = .95$, n.s.; time, $F(1, 84) = .50$, n.s.; or the interaction of group and time, $F(2, 84) = 1.95$, n.s. Subsequent univariate $F$ tests revealed only a significant group by time effect for subjects' pre-interaction scores on the depression subscale of the MAACL, $F(2, 84) = 3.91, p < .05$. This interaction is portrayed in Figure 1.

There was a multivariate effect attributable to subjects' pre- vs. post-interaction completions of the MAACL, $F(1, 84) = 8.89, p < .001$. Univariate $F$ tests revealed significant differences in pre- and post-interaction scores on the depression subscale, $F(1, 84) = 4.89, p < .05$, and on the anxiety subscale, $F(1, 84) = 25.42, p < .001$. Further, the difference between pre- and post-interaction scores on the hostility subscale of the MAACL approached significance, $F(1, 84) = 3.76, p = .056$. In every instance, the scores revealed lower depression, anxiety, and hostility after the interaction.

There were no significant multivariate effects attributable to time by pre/post-interaction, $F(1, 84) = 1.42$, n.s.; group by pre/post-interaction, $F(2, 84) = .50$, n.s.; or group by time by pre/post-interaction, $F(2, 84) = 1.40$, n.s. Subsequent univariate $F$ tests revealed only a significant group by time by pre/post-interaction effect for scores on the anxiety subscale of the...
Table 5

Pre- and Post-Interaction Means and Standard Deviations on MAACL Subscales for Time 1 and Time 2 Subjects

<table>
<thead>
<tr>
<th></th>
<th>Depression</th>
<th>Anxiety</th>
<th>Hostility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td>Sx</td>
<td>X</td>
</tr>
<tr>
<td>Subjects Interacting with Nd-Nd Targets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>14.60</td>
<td>4.22</td>
<td>14.67</td>
</tr>
<tr>
<td>Time 2</td>
<td>12.60</td>
<td>5.07</td>
<td>11.53</td>
</tr>
<tr>
<td>Subjects Interacting with D-D Targets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>12.07</td>
<td>5.32</td>
<td>12.13</td>
</tr>
<tr>
<td>Time 2</td>
<td>15.93</td>
<td>4.35</td>
<td>14.87</td>
</tr>
<tr>
<td>Subjects Interacting with D-Nd Targets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>13.13</td>
<td>3.60</td>
<td>13.27</td>
</tr>
<tr>
<td>Time 2</td>
<td>14.00</td>
<td>4.39</td>
<td>12.93</td>
</tr>
</tbody>
</table>
Legend:  
○ - Subjects interacting with D-D targets  
■ - Subjects interacting with Nd-Nd targets  
▲ - Subjects interacting with D-Nd targets  

Figure 1. Subjects groups' mean pre-interaction scores on the Depression subscale of the MAACL at Time 1 and Time 2.
Lastly, a 3(groups) by 2(times) MANOVA was conducted on subjects' post-interaction MAACL subscale scores. Results indicated no multivariate effects attributable to group, \( F(2, 84) = .60, \) n.s.; time, \( F(1, 84) = .95, \) n.s.; or the interaction of group and time, \( F(2, 84) = 1.70, \) n.s. Subsequent univariate F tests revealed a significant group by time interaction for subjects' post-interaction scores on the depression subscale of the MAACL, \( F(2, 84) = 3.84, p < .05. \) This interaction is portrayed in Figure 2.

Social impact. A 3(groups) by 2(times) MANOVA was conducted to compare subject groups' cognitive and affective reactions to target groups on the 15 IMI subscales. There was no significant multivariate effect attributable to group, \( F(2, 84) = .42, \) n.s. Univariate F tests revealed no significant group effects for any of the 15 subscales. There was no significant multivariate effect attributable to time, \( F(1, 84) = 1.42, \) n.s. Univariate F tests, however, revealed significant differences between times in subject groups' reactions on the following IMI subscales: Mistrustful, \( F(1, 84) = 4.07, p < .05; \) Inhibited, \( F(1, 84) = 6.55, p < .01; \) and Agreeable, \( F(1, 84) = 8.27, p < .005. \) Further breakdowns revealed that at Time 2, subjects interacting with targets in all three groups reported reactions reflective of a more trusting, uninhibited, and agreeable interpersonal style than did subject groups interacting with the target groups at Time 1 (see Table 6). Finally, results indicated no significant multivariate effect attributable to the interaction of group and time, \( F(2, 84) = .73, \) n.s. Subsequent univariate F tests revealed no significant group by time effects for any of the 15 IMI subscales.

As in the Time 1 analyses, an overall impact score was derived from the response of each subject by adding together their scores on each of the 15 IMI
Figure 2. Subject groups' mean post-interaction scores on the Depression subscale of the MAACL at Time 1 and Time 2.
Table 6

Means and Standard Deviations for Subject Groups on the Mistrusting, Inhibited, and Agreeable Subscales of the IMI at Time 1 and Time 2

<table>
<thead>
<tr>
<th>Target Groups Interacted With</th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>Sx</td>
</tr>
<tr>
<td>Mistrusting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-D</td>
<td>9.40</td>
<td>3.29</td>
</tr>
<tr>
<td>Nd-Nd</td>
<td>10.40</td>
<td>2.10</td>
</tr>
<tr>
<td>D-Nd</td>
<td>9.93</td>
<td>3.01</td>
</tr>
<tr>
<td>Inhibited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-D</td>
<td>9.60</td>
<td>3.66</td>
</tr>
<tr>
<td>Nd-Nd</td>
<td>9.60</td>
<td>2.00</td>
</tr>
<tr>
<td>D-Nd</td>
<td>9.47</td>
<td>2.75</td>
</tr>
<tr>
<td>Agreeable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-D</td>
<td>13.20</td>
<td>2.62</td>
</tr>
<tr>
<td>Nd-Nd</td>
<td>12.93</td>
<td>3.83</td>
</tr>
<tr>
<td>D-Nd</td>
<td>12.60</td>
<td>2.69</td>
</tr>
</tbody>
</table>
subscales and then dividing the sum by 15. A 2(group) ANOVA using these derived scores indicated no significant group effect, \( F(2, 84) = .13, \text{n.s.} \); time effect, \( F(1, 84) = .13, \text{n.s.} \); or group by time interaction, \( F(2, 84) = .12, \text{n.s.} \).

**Acceptance/rejection of target.** A 3(groups) by 2(times) ANOVA was carried out in order to assess differences between subject groups within and across times in their acceptance/rejection of target groups. As in the Time 1 analysis, each subject's raw summed score on the Future Interaction Questionnaire was used in the analysis. Results indicated no significant main effect for group, \( F(2, 84) = .41, \text{n.s.} \); or for time, \( F(1, 84) = 2.37, \text{n.s.} \). Further, there was no significant group by time interaction, \( F(2, 84) = .98, \text{n.s.} \).

**Observational Measures**

**Verbal behavior.** A 3(groups) by 2(times) MANOVA was used to assess differences in verbal behavior of subject groups toward the target groups. Results indicated no significant multivariate effects attributable to group, \( F(2, 84) = .83, \text{n.s.} \); time, \( F(1, 84) = 2.09, \text{n.s.} \); or the interaction of group and time, \( F(2, 84) = 1.23, \text{n.s.} \). Univariate tests revealed no significant differences between subject groups' responses within or across times on the total number of verbal responses, or on any of the specific verbal measures (i.e., direct support, conversation maintenance positive, conversation maintenance neutral, conversation maintenance negative, direct negative, silent responses).

**Nonverbal behavior.** A 3(groups) by 2(times) MANOVA was carried out in order to assess for differences in the nonverbal behavior of subject groups interacting with the 3 target groups at Time 1 and Time 2. Results indicated no significant multivariate effects attributable to group, \( F(2, 84) = .90, \text{n.s.} \).
n.s.; time, $F(1, 84) = 1.17$, n.s.; or the interaction of group and time, $F(2, 84) = 1.18$, n.s. Univariate $F$ tests revealed a significant group effect for eye contact, $F(2, 84) = 4.16, p < .05$. Subject groups interacting with individuals from the D-Nd target group displayed less eye contact overall than did subject groups interacting with individuals from the other two target groups. Further, univariate $F$ tests revealed a significant group by time interaction for the number of illustrators displayed by subject groups, $F(2, 84) = 3.47, p < .05$. Breakdowns revealed that the number of illustrators displayed by subjects interacting with individuals from the D-D and Nd-Nd target groups at Time 2 were lower than the number displayed by subjects interacting with individuals from these target groups at Time 1. The number of illustrators displayed by subjects interacting with individuals from the D-Nd target group at Time 2 was higher than the number displayed by subjects interacting with individuals from this target group at Time 1. It should be noted, however, that the actual proportion of observation intervals in which illustrators occurred was extremely low, ranging from .00 to .06.

**Bipolar adjective ratings.** A 3(groups) by 2(times) MANOVA was carried out in order to assess differences in observer ratings of subject groups' mood, anxiety level, social skill, and hostility/friendliness on the two occasions. There was no multivariate effect attributable to group, $F(2, 84) = .92$, n.s.; time, $F(1, 84) = 1.24$, n.s.; or the interaction of group and time, $F(2, 84) = .38$, n.s. Univariate $F$ tests revealed no significant group, time, or group by time effects for any of the four rating scales.

**Correlational Analyses**

In a further procedure, correlational analyses were carried out in order to examine the relationships between (a) target individuals' BDI scores and the responses of their partners, and (b) subject individuals' BDI scores and
their own responses. The results of these correlational analyses are presented in Table 7.

Target BDI scores correlated significantly with only two variables. There was a significant negative correlation between targets' BDI scores and the number of illustrators displayed by subjects in the interactions ($r = -0.19, p < 0.05$). Further, there was a significant positive correlation between targets' BDI scores and observers' ratings of the subjects' comfort level in the interactions ($r = 0.19, p < 0.05$).

Subjects' BDI scores correlated significantly with their self-reports of pre-interaction mood, as measured by the depression, anxiety, and hostility subscales of the MAACL ($r = 0.29, p < 0.01; r = 0.42, p < 0.001; r = 0.20, p < 0.05$; respectively). Significant correlations were also found between subjects' BDI scores and their post-interaction mood scores on the depression and anxiety subscales of the MAACL ($r = 0.25, p < 0.01; r = 0.35, p < 0.001$, respectively). Subjects' BDI scores also correlated with their scores on the Hostility subscale of the IMI ($r = 0.18, p < 0.05$), and with the number of adaptors used while interacting with their target partners ($r = -0.22, p < 0.05$). Further correlations were found between subjects BDI scores and observer ratings of their pleasantness ($r = -0.20, p < 0.05$), mood ($r = -0.46, p < 0.001$), comfort ($r = -0.22, p < 0.01$), and friendliness ($r = -0.32, p < 0.001$) while interacting with targets.

**DISCUSSION**

This study was conducted in order to examine the nature of the social responses elicited by groups of mildly depressed (D) and nondepressed (Nd) individuals, and the stability of the social responses elicited by these groups (i.e., D-D, Nd-Nd, and D-Nd groups) over time. Based on Coyne's (1976a) interaction model of depression and related research, it was
Table 7

Correlations between BDI Scores of Targets/Subjects and Subjects' Responses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Target BDI</th>
<th>Subject BDI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-Report</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAACL - Pre-interaction depression scale</td>
<td>-.08</td>
<td>.29**</td>
</tr>
<tr>
<td>Pre-interaction anxiety scale</td>
<td>-.12</td>
<td>.42***</td>
</tr>
<tr>
<td>Pre-interaction hostility scale</td>
<td>-.11</td>
<td>.20*</td>
</tr>
<tr>
<td>Post-interaction depression scale</td>
<td>-.05</td>
<td>.28**</td>
</tr>
<tr>
<td>Post-interaction anxiety scale</td>
<td>-.13</td>
<td>.35***</td>
</tr>
<tr>
<td>Post-interaction hostility scale</td>
<td>-.02</td>
<td>.07</td>
</tr>
<tr>
<td>Pre-interaction hostility scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMI Scales - Dominant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive</td>
<td>.10</td>
<td>.10</td>
</tr>
<tr>
<td>Hostile</td>
<td>.16</td>
<td>.00</td>
</tr>
<tr>
<td>Mistrusting</td>
<td>-.02</td>
<td>.18*</td>
</tr>
<tr>
<td>Detached</td>
<td>.01</td>
<td>.09</td>
</tr>
<tr>
<td>Inhibited</td>
<td>.20</td>
<td>-.05</td>
</tr>
<tr>
<td>Submissive</td>
<td>.05</td>
<td>-.00</td>
</tr>
<tr>
<td>Succorant</td>
<td>.11</td>
<td>-.06</td>
</tr>
<tr>
<td>Abusive</td>
<td>.09</td>
<td>-.12</td>
</tr>
<tr>
<td>Deferent</td>
<td>-.02</td>
<td>.16</td>
</tr>
<tr>
<td>Agreeable</td>
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<td>-.05</td>
</tr>
<tr>
<td>Nurturant</td>
<td>-.14</td>
<td>-.16</td>
</tr>
<tr>
<td>Affiliative</td>
<td>-.10</td>
<td>.04</td>
</tr>
<tr>
<td>Sociable</td>
<td>-.06</td>
<td>-.03</td>
</tr>
<tr>
<td>Exhibitionistic</td>
<td>.11</td>
<td>.05</td>
</tr>
<tr>
<td>Overall Impact</td>
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<td>.01</td>
</tr>
<tr>
<td>Future Interaction Questionnaire Score</td>
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<td>-.14</td>
</tr>
<tr>
<td><strong>Behavioral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal - Direct Support</td>
<td>.03</td>
<td>-.02</td>
</tr>
<tr>
<td>Conversation Maintenance Positive</td>
<td>.07</td>
<td>-.03</td>
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<tr>
<td>Conversation Maintenance Neutral</td>
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<tr>
<td>Conversation Maintenance Negative</td>
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<td>.12</td>
</tr>
<tr>
<td>Direct Negative</td>
<td>-.15</td>
<td>.03</td>
</tr>
<tr>
<td>Silence</td>
<td>-.14</td>
<td>.06</td>
</tr>
<tr>
<td>Nonverbal - Eye Contact</td>
<td>.08</td>
<td>.01</td>
</tr>
<tr>
<td>Smiling</td>
<td>-.02</td>
<td>-.03</td>
</tr>
<tr>
<td>Pleasantness</td>
<td>.12</td>
<td>-.20*</td>
</tr>
<tr>
<td>Arousal</td>
<td>.13</td>
<td>-.14</td>
</tr>
<tr>
<td>Gestures - Illustrators</td>
<td>-.19*</td>
<td>-.01</td>
</tr>
<tr>
<td>Adaptors</td>
<td>.05</td>
<td>-.22*</td>
</tr>
<tr>
<td>Bipolar Ratings - Mood</td>
<td>.12</td>
<td>-.46***</td>
</tr>
<tr>
<td>Comfort</td>
<td>.19*</td>
<td>-.22*</td>
</tr>
<tr>
<td>Friendliness</td>
<td>.16</td>
<td>-.32**</td>
</tr>
<tr>
<td>Social Skill</td>
<td>-.06</td>
<td>.04</td>
</tr>
</tbody>
</table>

Note:  *p < .05; **p < .01; ***p < .001
hypothesized that at Time 1, individuals in the D-D target group would elicit more negative social responses from their partners than would individuals in the Nd-Nd target group. Reactions elicited by the D-D target group, and by the Nd-Nd target group, were expected to be relatively stable over the two occasions. Thus, consistent with the predicted Time 1 results, the D-D targets were expected to elicit more negative social responses at Time 2 than were the Nd-Nd targets. Further, it was hypothesized that from Time 1 to Time 2, the responses elicited by the D-Nd target group would shift from being similar to those elicited by the D-D target group on the first occasion to being similar to those elicited by the Nd-Nd target group on the second occasion.

Results of the present investigation did not support the above predictions. At Time 1, there were no significant overall differences in responses to mildly depressed and nondepressed target groups in terms of subjects' self-reported mood, acceptance/rejection of their partner, interpersonal reactions, or verbal and nonverbal conversational behaviors. The only identified difference in subjects' responses to the two groups of targets was in terms of the number of silent responses elicited. The importance of this group difference in the rate of silence is limited by the extremely low rate of occurrence of silent responses toward both target groups.

Retest analyses revealed none of the predicted differences in responses to the D-D, Nd-Nd, and D-Nd target groups. In fact, there was a great deal of similarity in the responses elicited by all three target groups, and these responses were markedly stable over the two occasions.

Mood induction effects did not discriminate meaningfully between subject groups either within or across times, however, there were a number of results worthy of mention. First, mood scores of all subject groups, regardless of
the D/Nd status of their partners, shifted from pre- to post-interaction in a manner reflecting a reduction in anxiety, depression, and to a lesser extent hostility. The shift in mood may reflect: a sensitizing effect of having completed the pre-interaction MAACL, a general sense of relief upon having completed the videotaped interaction, or perhaps a mood-bolstering effect from having communicated with another individual. On the basis of this investigation, it is not possible to say which, if any, of these explanations accounts for the observed mood effect.

There was a significant group by time by pre-post interaction effect for the Anxiety subscale of the MAACL. Inspection of this interaction reveals that subject groups interacting with the Nd-Nd and D-D target groups at Time 2 gave self-reports indicative of a greater decrease in anxiety from pre- to post-interaction than did those subject groups interacting with the same target groups at Time 1. The subject group interacting with the D-Nd targets at Time 2 gave reports indicative of a smaller decrease in anxiety from pre- to post-interaction than did the subject group interacting with this target group at Time 1. These findings are not readily interpretable. Coyne's interaction model of depression would not predict such an interaction.

Finally, when group differences in mood induction were assessed using post-interaction MAACL scores, without taking pre-interaction mood scores into account (as was done in all previous investigations of mood "induction"), a significant group by time interaction was found for scores on the Depression subscale of the MAACL. While the actual interaction is not theoretically meaningful, this finding can be used to illustrate the importance of including a pre-interaction assessment of mood. In this case, the group by time effect for scores on the post-interaction depression subscale is very similar to the significant group by time effect found for pre-interaction scores on this
subscale. These results clearly imply that post-interaction mood scores should not be used in isolation to indicate mood induction effects. In the present study, it appears that post-interaction mood was a function of pre-interaction mood, and was not noticeably influenced by the brief interaction occurring between the two completions of the MAACL.

No differences were found in subject groups' self-reported acceptance/rejection of the three target groups either within one occasion or across the two occasions. Subjects' self-reports on the measure of targets' social impact revealed no differences between target groups in the affective and cognitive reactions they elicited over the two testing occasions. At Time 2, however, all subject groups reported reactions reflective of a more trusting, agreeable, and uninhibited interpersonal style than did subjects paired with the same target groups at Time 1. Perhaps this difference can be attributed to subjects on the second occasion being affected by their target partners' familiarity with the experimental procedure, and therefore feeling more comfortable than did subjects paired with the same targets on the first occasion.

An assessment of observer ratings of subject groups' verbal and nonverbal behavior and general interpersonal style failed to identify meaningful differences between subject groups either between or within occasions. It should be noted that results for the nonverbal variables of arousal and smiling, and for observers' impressions of subjects' general interpersonal style (i.e., mood, comfort, friendliness, and social skill), should be interpreted with caution given the less than ideal interrater reliability coefficients for these variables.

In summary, analyses based on the classification of individuals into depressed and nondepressed groups showed none of the anticipated differences
in subjects' responses to groups of depressed and nondepressed individuals, or to the same individuals over time as they shifted from depressed to nondepressed status.

The relationship between depression and the social responses elicited was also assessed using correlational analyses. Results of these analyses draw attention to the lack of relationship between target individuals' depression levels, as indicated by BDI scores, and the responses elicited from their subject partners. Subjects' BDI scores correlated with a greater number of the dependent variables than did targets' BDI scores. However, even these relationships are not impressive given that most of the variables with which subjects' BDI scores were found to correlate with were also indices of mood and comfort level (e.g., pre and postinteraction MAACL subscale scores; observer ratings of subjects' pleasantness, mood, and comfort). Thus, this study suggests that the interpersonal responses elicited by mildly depressed individuals is not profound, and in fact is no different from that elicited by nondepressed individuals.

Preceding studies in the area have generally reported negative responses to depressed individuals; however, there has been a lack of agreement regarding the specific negative responses elicited. A number of investigators have found negative mood following exposure to depressed targets (Coyne, 1976b; Hammen & Peters, 1978; Winer et al., 1981; Strack & Coyne, 1983). Others have reported an absence of such an effect (Howes & Hokanson, 1979; Gotlib & Robinson, 1982; King & Heller, 1984). Some investigators report that depressed targets, relative to nondepressed targets, are more rejected by their partners (Coyne, 1976b; Hammen & Peters, 1978; Winer et al., 1981; Howes & Hokanson, 1979; Strack & Coyne, 1983). For example, Howes and Hokanson (1979) reported that their depressed targets were described by subjects in
more negative terms and as having a greater interpersonal impact than were nondepressed targets. Gotlib and Robinson (1982), however, found significant differences in subjects' verbal and nonverbal behavior towards depressed and nondepressed target groups, but no group difference in the rejection of targets. The current study also failed to reveal any difference in the rejection of depressed and nondepressed targets.

It is difficult to draw general conclusions regarding interpersonal responses to depressed individuals on the basis of much of the existing literature. The inconsistencies in the findings of these investigations may be accounted for by the wide variation in depressed target stimuli and experimental procedures used across studies. As an illustration of the problem, the social responses to depressed individuals have been investigated through such diverse procedures as the reading of a transcript simulating a depressed person's responses, an intercom conversation with a confederate pretending to be depressed, and direct face-to-face interactions with a mildly depressed individual.

According to Coyne's interaction model, an individual need only exhibit some depressive symptoms in order to elicit responses different from those elicited by nondepressed individuals. By these standards, the targets and procedures used in the present investigation should have been adequate to allow the emergence of any differential social responses to depressed and nondepressed individuals that might arise from a brief social interaction. Thus, in light of the findings of previous investigations, particularly those of Gotlib and Robinson (1982) whose procedures were replicated with some modifications in the present study, the lack of significant differences in response to the target groups in the present study are surprising. The validity of the present findings must be assessed. In order to do so,
questions regarding the adequacy of this investigation as an approximate replication of Gotlib and Robinson's experimental procedure must be addressed. More generally, it is important to examine the adequacy of such "analogue" samples and laboratory procedures for investigating the interactional model of depression.

It was expected that results from the initial phase of the present study would replicate the findings of Gotlib and Robinson. There were, however, several minor methodological differences between the two studies that should be considered as possible reasons for the failure to replicate. The most important of these differences, as well as the potential of each of these differences to account for the inconsistent results between the two studies will be briefly discussed.

In terms of subject variables, the selection criteria for inclusion in the various target and subject groups were different in the two studies. Gotlib and Robinson included individuals with BDI scores of 9 and above in their depressed target group, and those with scores of 6 or below in their nondepressed target group. The present investigation included individuals with BDI scores of 10 or above in the depressed target group, and individuals with scores of 8 or below in the nondepressed target and subject groups. BDI cutoff scores used in research studies are somewhat arbitrarily set. The cutoff scores used by Gotlib and Robinson, and in the present investigation, are both clearly acceptable by research standards, and it is highly unlikely that this minimal difference in cutoff scores could account for the differences in the results of the two studies.

The number of subjects per group in the present study differed minimally from that of Gotlib and Robinson. While Gotlib and Robinson had 20 subjects per group, the present study had 15 subjects per group. It is not likely that
this difference in group size between the studies affected the obtained results. In the present investigation there were no signs of patterns/trends that even approached the significant effects found by Gotlib and Robinson. Thus, the increase in power that 20 subjects per cell would have created is not likely to have appreciably changed the results.

It may be the case that the differences in results were simply a function of the different samples of students used in the two investigations. In both studies, subjects were female undergraduates enrolled in Canadian universities. However, it is conceivable that Gotlib and Robinson's findings, or the lack of such findings in the present study, were due to the idiosyncratic characteristics of one or both of the relatively small samples used. Further research would have to be conducted in order to more thoroughly investigate this possibility.

There were a number of procedural differences between the two studies that require consideration. First, whereas Gotlib and Robinson had target-subject pairs carry out 15 minute interactions, the target-subject pairs in the present investigation conversed for only 5 minutes. This shorter total interaction time would at first seem to be a potential reason for the discrepant findings across the two studies. However, Gotlib and Robinson reported that differences in conversational responses to their depressed and nondepressed target groups were evident in the first 3 minutes of the interactions. Thus, it would appear that the 5 minute interactions were of sufficient length to allow the emergence of differences in conversational behavior towards the different target groups.

The present investigation was not designed to exactly replicate Gotlib and Robinson's administration of questionnaire measures. However, the changes made should not have negatively affected the validity of this study. As noted
earlier, pre- and post-interaction MAACL's were completed by subjects in this investigation. While the addition of a pre-interaction measure risks sensitizing subjects to the post-interaction MAACL, the benefits of including this pre-interaction measure were judged to outweigh the possible negative consequences. It was seen as crucial to ensure that if mood effects were found to be present, they could be attributed to the subjects' interactions with targets. MAACL scores for all subjects did become somewhat less negative from pre- to post-interaction, however, this does not seem to reflect a significant sensitizing effect of having completed the pre-interaction MAACL. Significant correlations between subjects' BDI scores and their pre- as well as post-interaction MAACL scores suggest that the MAACL, like the BDI, was picking up on a relatively stable mood state.

While Gotlib and Robinson had subjects and targets from each pair fill out post-interaction questionnaires in separate rooms, subject and target pairs in the present study remained in the large interaction room, but completed questionnaires in relative privacy. Although this situation was not ideal, it is unlikely to account for the lack of differences in self-report responses to the target groups. Gotlib and Robinson failed to find differences in subjects' self-reports even though they did separate their subject-target dyads after the interactions. Further, Strack and Coyne (1983) found that subjects gave similar responses on questionnaire measures of reactions to target partners regardless of whether or not they expected this information to be shared with their partners.

The behavioral coding scheme used by Gotlib and Robinson was used in the present investigation to assess the verbal and nonverbal behaviors of subjects. Thus, differences in the observational findings across the two studies cannot be attributed to differences in the types of behaviors
assessed, or to differences in the manner of assessing the specified behaviors. It should be noted, however, that Gotlib and Robinson's nonverbal behavioral coding scheme does have some problems. In their procedure, nonverbal behaviors are time sampled on a rotating basis—that is, coders are to observe only one type of nonverbal behavior at a time. In a five minute time period, the occurrence or nonoccurrence of each nonverbal behavior is sampled approximately seven times. This small number of observations for each behavior may simply be inadequate for providing a complete picture of subjects' behaviors.

Further, Gotlib and Robinson assessed the verbal and nonverbal behaviors of their targets and confirmed that there were behavioral differences between the depressed and nondepressed target groups. In the present investigation, behaviors of the target groups were not assessed. There is, however, no conclusive evidence that specific verbal and/or nonverbal behaviors of depressed individuals are accountable for the elicitation of negative social reactions (e.g., Coyne, 1976b; Youngren & Lewinsohn, 1980). Given that the target groups in the present study are directly comparable to those of Gotlib and Robinson in terms of sex, age, occupation, and BDI scores; there is no a priori reason to believe that the equivalent target groups in the two studies would differ with respect to their interpersonal behavior.

In summary, while there were differences in the procedures used in the present investigation and those used by Gotlib and Robinson, these differences cannot reasonably account for the discrepancies in the results obtained by the two studies. Consideration of the above issues leads to the conclusion that the present investigation was adequate as a replication of Gotlib and Robinson's procedures, and should have allowed the identification of differences in responses to the depressed and nondepressed target groups if,
in fact, real differences were present.

Previous research in the area has failed to look at the temporal stability of social responses to depressed individuals. A major aim of the present investigation was to assess the stability of social responses to depressed and nondepressed target groups over time. Given the unexpected lack of differences in responses to the target groups at Time 1, the ability of the present investigation to document changes over time in differential social responses to depressed and nondepressed target groups was minimized. Indeed, the results of the present study lead to the conclusion that social responses to depressed and nondepressed target groups are essentially the same, and that these social responses do not change over a three week interval, even though the mood of the targets may have alter over this time period. Further research addressing the stability of social responses to depressed individuals is clearly necessary.

It is important to consider the validity of the present investigation and other laboratory experiments as tests of Coyne's interactional model of depression. Coyne proposed that the depressed individual displays depressive behavior in ongoing interactions with the significant others in his/her life. These depressive behaviors initially elicit reassurance and supportive feedback. Over time, this behavior becomes more aversive and the supportive behavior of others gives way to negative reactions and rejection. Given the major tenets of this model, a number of serious problems with the existing experimental literature in support of Coyne's model can be identified. First, in the present study (as well as in that of Gotlib & Robinson, 1982; Strack & Coyne, 1983), mildly depressed subjects, whose depression levels were determined by their BDI scores, were used as depressed target stimuli. The fact that these targets were only mildly depressed would not have been
troublesome for the model if in fact these individuals could be shown to display depressive behavior. However, since the salient interpersonal behaviors of depressed persons have not been elucidated, it is not possible to confirm whether these targets actually displayed the depressive behavior critical for eliciting negative interpersonal reactions. Further, since we do not have an understanding of the critical behavioral differences between depressed and nondepressed individuals, it is even more difficult to reasonably support the use of target stimuli such as transcripts simulating a depressed individual, or confederates enacting a depressed role. Strack and Coyne (1983) suggest that in such investigations, "researchers may be merely exploring their and the subjects' preconceived notions about interactions involving depressed persons" (p. 799). Investigations would provide more valid results in the testing of the interactional model if severely/clinically depressed individuals were used as targets.

Questions can be raised regarding the appropriateness of laboratory procedures in which the initial reactions of strangers to depressed targets are assessed in an attempt to shed light on the interactional model of depression. Coyne (1985) argues that it is acceptable, even desirable, to investigate depressive interactional patterns by studying the emerging interactional pattern between pairs of strangers. According to Coyne, this is the case because such interactions eliminate the confounding influence of the two individuals having a history of negative experiences with each other. However, given that the interactional model is intended to describe the interactions over time of depressed individuals with the significant others in their social environment (i.e., friends, family), it would appear that a critical aspect of the model is lacking in laboratory investigations of strangers' reactions during and following brief meetings with depressed target
individuals. While such laboratory research tells something about depressed persons' social interactions, it does not address the interactional model, per se. Doerfler and Chaplin (1985) assert that research investigating interactions between strangers "fails to address the central thesis of the [interactional] model (i.e., interactions that occur in the context of established relationships)" (p. 229).

Further, the accumulated literature investigating the interactional model accepts the finding of negative, rejecting responses by strangers to depressed targets as supportive of the interactional model. However, the interactional model would clearly predict that in a first encounter with a depressed individual, others would provide positive (i.e., reassuring and supportive) responses, and that only after repeated encounters would these responses become more negative and rejecting. Thus, it would seem that a finding of negative reactions to depressed targets, relative to nondepressed targets, in a brief initial encounter would actually run contrary to the interactional pattern predicted by Coyne's model (see also Doerfler & Chaplin, 1985).

On the basis of these substantial criticisms, Doerfler and Chaplin (1985) argue that the laboratory investigations generated by Coyne's interaction model of depression are examples of type 3 error, or in other words, of research in which "one conducts the wrong experiment and thus provides illusory support for one's theoretical conjectures (Mahoney, 1978)" (Doerfler & Chaplin, p. 227).

Doerfler and Chaplin's criticisms of the existing literature are well taken. However, as Coyne (1985) points out, their emphasis on examining interactional patterns in the context of long established relationships ignores the influence of the history of past experiences shared by members of a longstanding dyad. It is time for researchers in the area to integrate the
positions of Doerfler and Chaplin (1985) and of Coyne (1985), and move towards a different type of investigation of social responses to depressed individuals. Responses to depressed and nondepressed targets should be studied in the natural social context, in interactions between the target and individuals previously unknown to the target but who are likely to become significant others in the target's life. Such developing relationships could be studied in, for example, a group of new university dorm-mates, or a group of mothers of young children moving into a new co-op housing development. In this way, long term interactional patterns of depressed individuals could be assessed without the confound of shared interpersonal history.

This "developing relationships" approach to assessing the interaction patterns of depressed individuals would allow investigators to more directly test Coyne's interaction model of depression. Using this approach, assessments could be made of the changes, or lack of changes, in the interpersonal behaviors and interactional patterns of individuals as their level of depression shifts over time (i.e., from depressed to nondepressed status, or vice versa). Further, using this approach, attempts could be made to identify the specific behaviors of depressed and nondepressed individuals that are critical for eliciting differential social responses. One can be optimistic that using this "developing relationships" research strategy, rather than the widely used but increasingly outdated "brief meeting between strangers" strategy, it will be possible to more successfully address questions regarding differential social responses to depressed and nondepressed individuals, and the stability of these responses over time.
REFERENCES


Appendix A

Consent Form
This study is about the process involved when 2 people are getting to know each other. We are interested in what people do when talking with a stranger for the first time, as well as how they feel and what they think about the conversation. One half of the total number of student volunteers will be asked to participate in the study on only one occasion. This will take approximately 30-40 minutes. The other half of the student volunteers will be asked to participate on two occasions a few weeks apart. This group will be asked to dedicate a total of 60-80 minutes to the study.

If after reading this page you decide to participate, we ask that you fill out this consent form and the attached mood inventory. We will then phone you to arrange a time for you to participate. When you come in, you will be introduced to your partner (another female student volunteer), and you will both be asked to fill out 2 brief mood questionnaires. You and your partner will then be left alone for 7 minutes to get to know a little about one another. This brief conversation will be videotaped. Afterwards, you will be asked to complete 3 more short questionnaires describing your feelings and impressions, and you will have a chance to ask questions. At this point, a detailed description of the study will be given to participants who are required on only one occasion. These individuals will then be finished participating in the study.

The researcher will make arrangements for a second appointment with students whose participation is required on a second occasion. Upon coming in for the second time, these participants will be asked to fill out pre and post conversation questionnaires identical to those used on the first occasion and carry out another 7 minute interaction with a new partner. The researcher will then explain, in detail, the purpose of the study and will answer any questions.

Your participation in this study is voluntary and you may withdraw at any time. Refusal to participate or withdraw will not affect your class standing. All information you provide will be kept in strict confidence. Your responses will be identified by a coded number, and results of this study will be reported in the form of group data only. If you would like more information about this study, now or in the future, please feel free to call Dr. Keith Dobson, Department of Psychology, UBC (228-6771) or Risha Joffe, Clinical Psychology Graduate Student (228-5581 or 736-7188).

"I have read over the description of the GETTING ACQUAINTED STUDY and hereby give my consent to participate. I acknowledge the receipt of a copy of this consent form.
Appendix B

The Beck Depression Inventory (BDI)
Beck Inventory

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Beck Inventory

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the PAST WEEK, INCLUDING TODAY: Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

1. 0 I do not feel sad.
   1 I feel sad.
   2 I am sad all the time and I can’t snap out of it.
   3 I am so sad or unhappy that I can’t stand it.

2. 0 I am not particularly discouraged about the future.
   1 I feel discouraged about the future.
   2 I feel I have nothing to look forward to.
   3 I feel that the future is hopeless and that things cannot improve.

3. 0 I do not feel like a failure.
   1 I feel I have failed more than the average person.
   2 As I look back on my life, all I can see is a lot of failures.
   3 I feel I am a complete failure as a person.

4. 0 I get as much satisfaction out of things as I used to.
   1 I don’t enjoy things the way I used to.
   2 I don’t get real satisfaction out of anything anymore.
   3 I am dissatisfied or bored with everything.

5. 0 I don’t feel particularly guilty.
   1 I feel guilty a good part of the time.
   2 I feel quite guilty most of the time.
   3 I feel guilty all of the time.

6. 0 I don’t feel I am being punished.
   1 I feel I may be punished.
   2 I expect to be punished.
   3 I feel I am being punished.

7. 0 I don’t feel disappointed in myself.
   1 I am disappointed in myself.
   2 I am disgusted with myself.
   3 I hate myself.

8. 0 I don’t feel I am any worse than anybody else.
   1 I am critical of myself for my weaknesses or mistakes.
   2 I blame myself all the time for my faults.
   3 I blame myself for everything bad that happens.

9. 0 I don’t have any thoughts of killing myself.
   1 I have thoughts of killing myself, but I would not carry them out.
   2 I would like to kill myself.
   3 I would kill myself if I had the chance.

10. 0 I don’t cry anymore than usual.
    1 I cry more now than I used to.
    2 I cry all the time now.
    3 I used to be able to cry, but now I can’t cry even though I want to.
11. 0 I am no more irritated now than I ever am.
   1 I get annoyed or irritated more easily than I used to.
   2 I feel irritated all the time now.
   3 I don't get irritated at all by the things that used to irritate me.

12. 0 I have not lost interest in other people.
   1 I am less interested in other people than I used to be.
   2 I have lost most of my interest in other people.
   3 I have lost all of my interest in other people.

13. 0 I make decisions about as well as I ever could.
   1 I put off making decisions more than I used to.
   2 I have greater difficulty in making decisions than before.
   3 I can't make decisions at all anymore.

14. 0 I don't feel I look any worse than I used to.
   1 I am less interested in other people than I used to be.
   2 I feel that there are permanent changes in my appearance that make
      me look unattractive.
   3 I believe that I look ugly.

15. 0 I can work about as well as before.
   1 It takes an extra effort to get started at doing something.
   2 I have to push myself very hard to do anything.
   3 I can't do any work at all.

16. 0 I can sleep as well as usual.
   1 I don't sleep as well as I used to.
   2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
   3 I wake up several hours earlier than I used to and cannot get back to sleep.

17. 0 I don't get more tired than usual.
   1 I get tired more easily than I used to.
   2 I get tired from doing almost anything.
   3 I am too tired to do anything.

18. 0 My appetite is no worse than usual
   1 My appetite is not as good as it used to be.
   2 My appetite is much worse now.
   3 I have no appetite at all anymore.

19. 0 I haven't lost much weight, if any lately.
   1 I have lost more than 5 pounds. I am purposely trying to lose weight by eating less.
   2 I have lost more than 10 pounds. Yes____  No____
   3 I have lost more than 15 pounds.

20. 0 I am no more worried about my health than usual.
   1 I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
   2 I am very worried about physical problems and it's hard to think of much else.
   3 I am so worried about my physical problems, that I cannot think about anything else.

21. 0 I have not noticed any recent change in my interest in sex.
   1 I am less interested in sex than I used to be.
   2 I am much less interested in sex now.
   3 I have lost interest in sex completely.
Appendix C

Today Form of the Multiple Affect Adjective Checklist (MAACL)
On this sheet you will find words which describe different moods and feelings. Circle the number of all which describe how you feel right now, at this moment.

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<th>devoted</th>
<th>67</th>
<th>interested</th>
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Appendix D

The Impact Message Inventory (IMI)
IMPACT MESSAGE INVENTORY
(IMI - FORM II - 1976)

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Leaves 64-67 not filmed;
permission not obtained.

For further information, apply to Dr. Donald J. Kiesler,
Department of Psychology, Virginia Commonwealth University,
Richmond, Virginia, U.S.A.
IMPACT MESSAGE INVENTORY

(IMI - FORM II - 1976)

Name: ________________________________

Age: ______ Sex: ______ Subject Number: ______

This inventory contains words, phrases and statements which people use to describe how they feel when interacting with another person.

You are to respond to this Inventory by indicating how accurately each of the following items describes your reactions to the person you have just seen. Respond to each item in terms of how precisely it describes the feelings this person arouses in you, the behaviors you want to direct toward her when she's around, and/or the descriptions of her that come to mind when you're with her. Indicate how each item describes your actual reactions by using the following scale: 1=Not at all, 2=Somewhat, 3=Moderately so, 4=Very much so.

In filling out the following pages, first imagine you are in this person's presence, in the process of interacting with her. Focus on the immediate reactions you would be experiencing. Then read each of the following items and fill in the number to the left of the statement which best describes how you would be feeling and/or would want to behave if you were actually, at this moment, in the person's presence.

At the top of each page, in bold print, is a statement which is to precede each of the items on that page. Read this statement to yourself before reading each item; it will aid you in imagining the presence of the person you have just seen.

There are no right or wrong answers since different people react differently to the same person. What we want you to indicate is the extent to which each item accurately describes what you would be experiencing if you were interacting right now with this person.

Please be sure to fill in the one number which best answers how accurately that item describes what you would be experiencing. For example, if an item is Somewhat descriptive of your reaction, fill in the number 2 for Somewhat descriptive.

Thank you in advance for your cooperation.

The Impact Message Inventory was developed by Donald J. Kiesler, Jack C. Anchin, Michael J. Perkins, Bernard M. Chirico, Edgar M. Kyle, and Edward J. Federman of Virginia Commonwealth University, Richmond, Virginia.

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1 - Not at all
2 - Somewhat
3 - Moderately so
4 - Very much so

WHEN I AM WITH THIS PERSON SHE MAKES ME FEEL

1. ___ bossed around.
2. ___ distant from her.
3. ___ superior to her.
4. ___ important.
5. ___ entertained.
6. ___ impersonal.
7. ___ like an intruder.
8. ___ in charge.
9. ___ appreciated by her.
10. ___ part of the group when she's around.
11. ___ cold.
12. ___ forced to shoulder all the responsibility.
13. ___ needed.
14. ___ complimented.
15. ___ as if she's the class clown.
16. ___ annoyed.
17. ___ embarrassed for her.
18. ___ frustrated because she won't defend her position.
19. ___ loved.
20. ___ taken charge of.
21. ___ defensive.
22. ___ curious as to why she avoids being alone.
23. ___ dominant.
24. ___ welcome with her.
25. ___ as important to her as others in the group.
26. ___ like an impersonal audience.
27. ___ uneasy.
28. ___ as though she should do it herself.
29. ___ admired.
30. ___ like I'm just one of many friends.
WHEN I AM WITH THIS PERSON SHE MAKES ME FEEL THAT ...

1. ___ I want to tell her to give someone else a chance to make a decision.
2. ___ I should be cautious about what I say or do around her.
3. ___ I should be very gentle with her.
4. ___ I want her to disagree with me sometimes.
5. ___ I could lean on her for support.
6. ___ I want to put her down.
7. ___ I'm going to intrude.
8. ___ I should tell her to stand up for herself.
9. ___ I can ask her to carry her share of the load.
10. ___ I could relax and she'd take charge.
11. ___ I want to stay away from her.
12. ___ I should avoid putting her on the spot.
13. ___ I could tell her anything and she would agree.
14. ___ I can join in the activities.
15. ___ I want to tell her she's obnoxious.
16. ___ I want to get away from her.

17. ___ I should do something to put her at ease.
18. ___ I want to point out her good qualities to her.
19. ___ I shouldn't hesitate to call on her.
20. ___ I shouldn't take her seriously.
21. ___ I should tell her she's often quite inconsiderate.
22. ___ I want to show her what she does is self-defeating.
23. ___ I should tell her not to be so nervous around me.
24. ___ I could ask her to do anything.
25. ___ I want to ask her why she constantly needs to be with other people.
26. ___ I want to protect myself.
27. ___ I should leave her alone.
28. ___ I should gently help her begin to assume responsibility for her own decisions.
29. ___ I want to hear what she doesn't like about me.
30. ___ I should like her.
1 - Not at all
2 - Somewhat
3 - Moderately so
4 - Very much so

WHEN I AM WITH THIS PERSON IT APPEARS TO ME THAT ...

1. ____ she wants to be the center of attraction.
2. ____ she doesn't want to get involved with me.
3. ____ she is most comfortable withdrawing into the background when an issue arises.
4. ____ she wants to pick my brain.
5. ____ she carries her share of the load.
6. ____ she wants me to put her on a pedestal.
7. ____ she'd rather be alone.
8. ____ she thinks she can't do anything for herself.
9. ____ her time is mine if I need it.
10. ____ she wants everyone to like her.
11. ____ she thinks it's every person for himself or herself.
12. ____ she thinks she will be ridiculed if she asserts herself with others.
13. ____ she would accept whatever I said.
14. ____ she wants to be helpful.
15. ____ she wants to be the charming one.
16. ____ she's carrying a grudge.
17. ____ she's nervous around me.
18. ____ whatever I did would be okay with her.
19. ____ she trusts me.
20. ____ she thinks other people find her interesting, amusing, fascinating and witty.
21. ____ she weighs situations in terms of what she can get out of them.
22. ____ she'd rather be left alone.
23. ____ she sees me as superior.
24. ____ she's genuinely interested in me.
25. ____ she wants to be with others.
26. ____ she thinks she's always in control of things.
27. ____ as far as she's concerned, I could just as easily be someone else.
28. ____ she thinks she is inadequate.
29. ____ she thinks I have most of the answers.
30. ____ she enjoys being with people.
Appendix E

The Future Interaction Questionnaire (FIQ)
OPINION SCALE

What are your thoughts and opinions about the person you have just seen? Answer the following questions by circling one of the numbers on the 6-point scale given with each question. Consider the person in comparison with other acquaintances that you have. Work quickly. Your first impression is probably best.

1. Would you like to meet this person?
   
   1  2  3  4  5  6
   definitely no
   definitely yes

2. Would you ask this person for advice?

   1  2  3  4  5  6
   definitely no
   definitely yes

3. Would you like to sit next to this person on a 3 hour bus trip?

   1  2  3  4  5  6
   definitely no
   definitely yes

4. Would you be willing to work on a job with this person?

   1  2  3  4  5  6
   definitely no
   definitely yes

5. Would you be willing to have this person eat lunch with you often?

   1  2  3  4  5  6
   definitely no
   definitely yes

6. Would you invite this person to your home?

   1  2  3  4  5  6
   definitely no
   definitely yes

7. Would you be willing to share an apartment with someone like this?

   1  2  3  4  5  6
   definitely no
   definitely yes

8. Would you be willing to have a person like this supervise your work?

   1  2  3  4  5  6
   definitely no
   definitely yes

9. How physically attractive do you think this person is?

   1  2  3  4  5  6
   definitely no
   definitely yes

10. How socially poised do you think this person is?

    1  2  3  4  5  6
    definitely no
    definitely yes
11. How likely would it be that this person could become a close friend of yours?

   1  2  3  4  5  6
   definitely no  definitely yes

12. How likely would you be to approve of a close relative dating a person with this kind of personality?

   1  2  3  4  5  6
   definitely no  definitely yes

13. How likely would you be to approve of a close relative marrying someone with a personality like this?

   1  2  3  4  5  6
   definitely no  definitely yes
Appendix F

Bipolar Adjective Rating Scales
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<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<td>distinctly uncomfortable/tense</td>
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<td>comfortable and relaxed</td>
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<td>2</td>
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</tr>
<tr>
<td>noticeably hostile/ unfriendly</td>
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<td></td>
<td>somewhat friendly</td>
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<td>very warm/ friendly</td>
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<tr>
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Mood

1  2  3  4  5  6  7

very sad

average

very happy
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