A COMPARISON OF THE QUANTITATIVE ASPECTS OF VERBAL

AND NONVERBAL NONCONTENT DIMENSIONS OF

SPEECH IN DEPRESSED AND NONDEPRESSED

COLLEGE STUDENTS

by

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ABSTRACT

The purpose of this study was to see if depressed and nondepressed college students differed in their verbal and nonverbal noncontent dimensions of speech when exposed to a positively emotionally toned or a negatively emotionally toned experimental interview. Forty female undergraduate volunteers who participated in the study were assigned to two groups, depressed or nondepressed, on the basis of their scores on the Beck Depression Inventory (Beck, 1967), the Depression Adjective Checklist (Lubin, 1965), and the Multiple Affect Adjective Checklist (Zuckerman & Lubin, 1965). Depressed subjects were then randomly assigned to the positive or negative interview, as were nondepressed subjects. There were 10 subjects in each of the four groups: the depressed positive condition; the depressed negative condition; the nondepressed positive condition, the nondepressed negative condition.

Contrary to the hypotheses, there was only one significant difference between the depressed and nondepressed subjects; the depressed subjects interrupted less times than the nondepressed subjects in the combined interview conditions. There were no significant interview by group membership interactions. The analysis did reveal that for four of the eight noncontent dimensions of speech there were significant differences between the two interview conditions. These differences were: less interrupting in the negative interview condition; less eye contact in the negative interview condition; fewer smiles in the negative condition; fewer nods in the negative condition.

During the negative interview the subjects' reactions to critical remarks, made by the interviewers, were scored in three categories: agreements with the critical statements; challenging the critical statements; making no response to the critical statements. No significant differences between the depressed and nondepressed subjects in the three categories were found.

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CHAPTER 1

INTRODUCTION

The phenomenon of depression has been observed throughout history. Although numerous theories have been generated as to its etiology and maintenance, there is little unequivocal empirical knowlegde to substantiate many of these. It has only been during recent years that a considerable increase in research activity has been done on some aspects of depression.

One variable which is gaining prominence in the research literature as a possible contributing factor in the maintenance and/ or etiology of depression, is social competence or skill (Lewinsohn, 1973; Seligman, 1975). The purpose of the present research is to explore one aspect of social competence in relation to depressed individuals, that of communicative skills. A review of material relevant to this particular topic follows.

The area of verbal behaviour in general has received a great deal of attention in the last few years (e.g., Matarazzo & Wiens, 1972). Of more specific interest to the present investigation, however, are the formal properties of speech or its noncontent dimensions (e.g., frequencies and durations of utterance units, latency before answering questions, and interruptions). Wiens, Matarazzo, Saslow, Thompson, and Matarazzo (1965) found that size of the conversational group, content of the conversation, setting, and role expectancies can affect noncontent areas of speech. For example, they reported that individuals spoke less in a group as opposed to a dyadic situation

and talked longer in utterances with high status interviewers than with their peers. With respect to reaction time latency, they found that it was influenced by the size of the group: subjects in a larger group exhibited shorter reaction time latencies than subjects in a dyadic conversation.

Content and personality can also influence noncontent areas of speech. Nathan, Schneller, and Lindsley (1964) found that more severely ill psychiatric patients talked less. In addition, patients talked less when discussing content that was personal and stressful. The amount of verbal productivity improved in patients as scores on the Minnesota Multiphasic Personality Inventory (MMPI) showed improvement (Aronson & Weintraub, 1967). Kanfer (1960) reported that female psychiatric patients talked at a rate which was 25% slower when talking to the interviewer about how they reacted to members of the opposite sex than when discussing their present illness. It has long been postulated that different groups of people are characterized by differing personality configurations. To see if such differences influenced noncontent areas of speech, Molde and Wiens (1967) compared psychiatric nurses with surgical nurses on three measures: duration of speech, reaction time latency, and interruptions. The study showed that psychiatric nurses spoke longer per utterance, had a considerably longer reaction time latency, and interrupted less often. Hackney (1974) found sex differences in noncontent dimensions of speech.

The review so far has focused on noncontent dimensions of speech occurring within the natural environment. We now turn to an examination of research on experimental manipulations in some noncontent

dimensions of speech. Apparently, one can change or modify noncontent dimensions of speech by introducing relative changes in the speech behaviour of one of the conversational partners: changes in the interviewer's duration of utterance from one time period to another produced striking and reproducible changes in the speech behaviour of the interviewee (Matarazzo, 1962; Matarazzo, Saslow, Matarazzo, & Phillips, 1958). For example, in one study (Matarazzo & Wiens, 1972) the interviewer systematically varied his own duration of utterance in the following manner: during the first 15 minutes duration of utterance was 5 seconds; in the second 15 minutes it was 10 seconds; and in the third 15 minutes it was again 5 seconds. The result was that as the interviewer modified his duration of utterance, the interviewee's speech behaviour changed in the same direction as the interviewer's.

Matarazzo, Wiens, and Saslow (1965) reported that head nodding and a "um-humming" sound by the interviewer increased the duration of utterances of the interviewee. Exposure to positive nonverbal behaviour cues from the interviewer, as opposed to negative cues, resulted in the interviewees maintaining more eye contact and smiling more (Gatton & Taylor, 1974). Liberman (1970) trained a therapist to use techniques of social reinforcement (such as saying "right", "yes", "mm-humm", smiling, or headnodding) to facilitate the development of inter-member group cohesiveness. He found that the therapist, through the selective use of prompts and reinforcements, could modify and facilitate verbal behaviour reflecting cohesiveness. Reinforcement and punishment contingencies were manipulated by Aiken (1965) in a group situation. He reported little change between sessions in the control group

and a clear rise in output for the rewarded subjects. Punished sub-

jects showed a slight decline. These studies demonstrate that at

least five variables can influence noncontent areas of speech emitted

by an interviewee: increases in the units of speech duration; head

nodding; saying "mm-humm", "right", "yes"; positive and negative be-

havioural cues; and reward and punishment.

Reaction time latency is another noncontent dimension of speech

which can be modified by manipulating interviewer behaviour. Matarazzo

& Wiens (1972) reported that if the interviewer kept his reaction

time latency at one second intervals throughout the interview, a

similar lack of change occurred in the interviewee's behaviour. If

the interviewer varied his reaction time latency in a one second -

five second pattern, the reaction time latencies of the interviewee

also changed in a similar pattern. In a natural setting (Matarazzo

& Wiens, 1972), it was reported that synchrony between the two con-

versationalists occurred. As the patient's reaction time latency

increased in one session or decreased in another, the reaction time

latency of the therapist modelled perfectly the reaction time latency

of the patient.

Interruptions can also be modified by experimental manipulation.

The amount of interrupting one speaker does can be modified by in-

creasing or decreasing the extent of this behaviour in the other part-

ner (Wiens, Saslow, & Matarazzo, 1966). For example, it was shown

that if the interviewer was on a schedule which increased and decreased

in interruptive behaviour, there were corresponding increases and

decreases in interruptive behaviour on the part of the interviewee.

Thus it can be seen that many factors can modify the noncontent dimensions of speech: duration of utterance; reaction time latency; rate of interruptions; head nodding; saying "right", "yes", "mm-humm"; degree of disturbance of the patient; and personality of the interviewee.

Another area which has been investigated is that of the relationship between duration of utterance, reaction time latency, and interruptions. How much a speaker is interrupted by another speaker is to an extent a function of the reaction time latency of the first speaker (Matarazzo & Wiens, 1972). For example, on days when a patient exhibited his shortest mean reaction time latencies, the therapist exhibited his highest interruptive behaviours. Conversely, when the patient exhibited his longest reaction time latencies the therapist interrupted least often. Some other findings concerning the relationship of duration of utterance, reaction time latency, and interruptions are as follows: frequencies of interruptions were not related to duration of utterance; the frequency with which a subject spoke was not related to how long he waited before speaking; duration of utterance was moderately and negatively correlated with reaction time latency (Matarazzo & Wiens, 1972). Putting these findings together suggests that people who typically talk in long utterances also have a tendency to answer their conversational partner with a short reaction time latency, and that those who are more hesitant in answering tend to speak in shorter utterances.

Some interesting data have been reported concerning level of empathy and noncontent areas of speech. A relationship between the

interviewer's level of empathy and his silences and interruptive be-
haviour has been found (Pierce & Mosher, 1967). Truax (1970) reported
a relationship between duration of utterance and level of accurate
empathy. Basically, it was found that therapists who talked more
were rated as showing higher levels of accurate empathy, and their
patients demonstrated greater degrees of overall improvement than with
therapists who talked less.

The above results are consistent with the findings reviewed
earlier (Matarazzo, 1962; Matarazzo, Saslow, Matarazzo, & Philips,
1958). Taken together, one could speculate that these interview tac-
tics are effective because they have in common the fact that they
represent greater activity or more human output, and in a sense greater
involvement on the part of the interviewer. This involvement could
suggest to the interviewee that the interviewer is really interested.
The hypothesized resulting state of greater satisfaction, produced
in the interviewee, may be the motivating force for the interviewee's
longer speech durations (Matarazzo & Wiens, 1972).

Another related area which has been explored concerns the rela-
tionship between noncontent speech variables and the interviewer's
style of interviewing. Basically, researchers have looked for under-
lying motivational and attitudinal states as these might be manifest
in noncontent dimensions of speech. Kanfer, Phillips, Matarazzo, and
Saslow (1960) explored this area by comparing two interviewing styles.
They used the same population of people, student nurses, and the same
content, the nurses' motivations and lifestyles, thus holding constant
subject population and content. The first interviewing style was

neutral, nonjudgemental, open-ended, and nondirective. The second

style was extremely interpretive. It was found that there was a sig-

nificant drop in the interviewee's mean duration of utterance under

the interpretive condition. Expectancy or motivational set was ex-

perimentally induced in interviewees. They were told that they would

be talking to either a cold or warm interviewer. This affected their

reaction time latencies (Allen, Wiens, Weitman, & Saslow, 1965).

Craig (1966) reported that increased accuracy of an interviewer's

statements about the interviewee's underlying personality and attitudes,

resulted in an increase in duration of utterance during subsequent

noncontent verbal responses by the interviewee. These data suggest

that both speech and silence indexes can be examined for their poten-

tial to reveal underlying moods, attitudes, or motivational states in

real life situations.

Although not as well-researched, there have been findings which

suggest that actual content of speech influences noncontent dimensions

of speech behaviour. It has been reported (Matarazzo & Wiens, 1972)

that there are significant differences in college students' duration

of utterances and silences when they discuss their family background

and occupational history. Also with college students, discussing

their major in college had significantly higher intrinsic saliency

than discussing their present living conditions (Matarazzo, Wiens,

Jackson, & Manaugh, 1970). Patrolmen (Matarrazo & Wiens, 1972) ex-

hibited shorter reaction time latencies and longer duration of utter-

ances in content conditions involving their occupational histories.

These studies suggest that discussion of education with college

students and occupation with patrolmen tapped in each case an already
present, differentially salient, motivational state appropriate to
each subject's life space. Moreover, this motivational state was re-
vealed in each subject's noncontent speech behaviour (Matarazzo &
Wiens, 1972).

Hinchliffe et al. (1971) found that nondepressed individuals had
significantly higher frequencies and lengths of eye contact than de-
pressed individuals. Kleinke et al. (1975) reported that subjects gave
answers of shortest duration to interviewers who did not look at them,
and, conversely, as eye contact maintained by the interviewer increased,
duration of utterance increased.

The last area of noncontent speech dimensions to be covered per-
tains to illustrative hand movements. Illustrative hand movements
are movements made by people when talking, in order to further des-
cribe what they are discussing. Ekman and Friesen (1974) reported that
illustrative hand movements were less frequent in depressed individuals
and that they increased with clinical improvement.

From the above review it can be seen that noncontent dimensions
of speech can be influenced and modified by many variables. Two
variables of noncontent dimensions of speech which have received little
attention are individual and group differences and differences produced
in noncontent speech behaviours by varying the emotional tone of
one of the partner's verbalizations. It is these last two areas
towards which the present research is directed.

The question of noncontent dimensions of speech and its rele-
vance to depression has been discussed by two major theorists,

Lewinsohn (1973) and Seligman (1975). Lewinsohn (1973) proposes a theory

which has as its central core the hypothesis that depression is caused

by a low rate of response contingent positive reinforcement. A low

rate of response contingent positive reinforcement produces the various

symptoms of depression. Decrease in activity level, including social

behaviour, characteristic of depression, are caused by a low rate of res-

ponse contingent positive reinforcement. Response contingent positive

reinforcement is viewed as the causative condition as it is quite similar

to placing a person on an extinction schedule. For other depressive

behaviours, such as dysphoria and somatic complaints, response contin-

gent positive reinforcement is viewed as an eliciting stimulus. These

latter symptoms are in turn strengthened by social reinforcement from

the environment in the form of sympathy and concern. In addition,

these same symptoms later contribute to the depression because they be-

come aversive to people in the depressive's environment. As a result,

these people start avoiding the depressed person, thus isolating him or

her, which in turn leads to a further decrease in the rate of response

contingent positive reinforcement. Three factors influence the total

number of response contingent positive reinforcement one gains from

the environment (Lewinsohn, 1973): the number of events which are

positively reinforcing to the person; the number of potentially posi-

tively reinforcing events present in the environment; and the extent to

which the person possesses the skills and emits those behaviours which

will result in response contingent positive reinforcement. It is the

last factor which this study will explore: more specifically, the

area of noncontent verbal and nonverbal behaviours and their relationship

to depression.

Lewinsohn. (1974) focused on interpersonal factors which may lead to or maintain depression. He hypothesized that social skills determine the amount of reinforcement a person receives from the social environment. Further, he hypothesized that a lack of social skills, such as found in depressed individuals, leads to both the dispensing and the receiving of a low rate of response contingent positive reinforcement. A socially skillful person emits behaviours which result in positive consequences from the social environment and avoids behaviours which result in negative consequences (Libet & Lewinsohn, 1973; Lewinsohn, Weinstein, & Alper, 1970; Lewinsohn, Weinstein, & Shaw, 1969). Depressed individuals are seen as being less socially skillful, and this lack of social skill is considered important for the occurrence and maintenance of depression (Libet & Lewinsohn, 1973; Lewinsohn et al., 1970). This deficit in depressed people's behaviour is demonstrated in several ways. The socially unskilled depressed individual dispenses less social reinforcement less frequently or at less opportune times than a socially skilled individual. In addition, this person may possess a full repertoire of social behaviours which others find aversive (for example, somatic complaints and dominating the conversation with discussions of personal problems (Coyne, 1976)). Much of Lewinsohn's research has been directed at identifying and then modifying the depressed individual's behaviour so that he or she will become more socially skillful and thus increase the amount of response contingent positive reinforcement.

In an early unpublished study by Libet et al (Note 1), it was

found that the verbal output of depressed and nondepressed indi-

viduals could be increased over a 45-minute conversation, but the

increase in output was greater for the nondepressed individuals.

Hinchliffe, Lancashire, and Roberts (1971) reported that depressed

individuals used more personal references, negators, and feeling

expressions than nondepressed individuals. Depressed individuals

also engage in less eye contact than nondepressed individuals (Waxer,

1974). The interpersonal behaviours of depressed and nondepressed

individuals in a group situation were found to differ in the following

ways: action vs. reaction; object vs. source of interaction; and

positive vs. negative interaction (Lewinsohn, 1973). Lewinsohn also

reported that, initially, depressed individuals engaged in one-half

the actions than those of the nondepressed individuals, but this dif-

ference attenuated over time. In addition, he found that the rate of

behaviour emitted by subjects was positively correlated with the rate

of behaviour elicited from others in the group. As depressed indi-

viduals emitted less behaviours, they elicited less behaviour from

others in the group. In the same study, Lewinsohn (1973) reported

that depressed individuals had significantly longer latencies for dis-

pensing social reinforcement than nondepressed individuals. In the

early part of the group interaction, the ratio of positive versus

negative responses was significantly higher for nondepressed as compared

to depressed individuals, but this again attenuated over time. All

of these outcomes would result in the depressive receiving less res-

ponse contingent positive reinforcement.

Using home observation, Lewinsohn and Shaffer (1971) found that

depressives and their spouses emitted approximately the same number

of verbal responses. The depressives, however, elicited fewer posi-

tive reactions and more negative reactions than did their spouses.

Libet and Lewinsohn (1973) reported that depressed individuals, as a

group, emitted actions at a lower rate than did nondepressed indivi-

duals; emitted positive reactions at a significantly lower rate; and

that rate of activity in the group was highly related to how much a

group member was responded to by the others. As a result, to the ex-

tent that attention is reciprocal, the depressed individuals, by

emitting one-half the behaviours of the nondepressed individuals, re-

ceive less social reinforcement. These investigators also found that

depressed males had a restricted interpersonal range. For example,

if someone of importance to that person were removed (i.e., died), the

depressed person's behavioural repertoire would be greatly depleted.

In addition, they reported that depressed individuals emitted fewer

positive reactions, suggesting that they withhold positive reinforce-

ment in social interactions though they do not act as an aversive

discriminative stimulus in the sense of punishing others. Finally,

depressed individuals were found to have longer reaction time latencies

than nondepressed individuals, suggesting that the depressives' timing

of social responses is off. The effect of a longer reaction time

latency would be an increase in the probability of an initiator direc-

ting behaviour toward a source of more immediate reactivity, resulting

again in a situation where the amount of positive reinforcement

elicited by the depressed individual creates an extinction schedule.

One can increase the level of interaction of depressed individuals by

providing them with a lot of feedback as to the consequences of their behaviour and a great deal of positive reinforcement (Lewinsohn, Weinstein, & Alper, 1970). On the other hand, Schrader and Craighead (Note 2) report different results from those of Lewinsohn. They found no difference between depressed and nondepressed individuals in frequency of responding and in the timing of reinforcement. These results suggest depressed individuals, in these two areas, are not less socially skillful than nondepressed individuals.

Lewinsohn, Lobitz, and Wilson (1973) did a study to examine the depressed individual's sensitivity to aversive stimuli. They found that depressed individuals were more sensitive to the aversive stimuli while it was occurring but not before or after its occurrence. These results are puzzling as one would expect that if depressives found the situation more aversive they would exhibit greater tendencies toward avoidance and withdrawal. Steward (Note 3) confirmed these results, finding that depressed individuals disliked negative social interactions more than nondepressed individuals.

Most of the above supports Lewinsohn's (1973) hypothesis that depressed individuals are deficient in verbal communicative skills, in both content and noncontent areas, which results in them gaining less reinforcement than nondepressed individuals from their social environment.

Seligman (1975) has also proposed a theory as to the etiology and maintenance of depression. He labels it "learned helplessness." He proposes that there are two major behavioural symptoms of depression, lack of motivation and distortion of cognitions. The motivational

symptom is represented by the lowered rate of response initiation

found in depressives; the cognitive dimension is caused by a dampened

ability to learn that responding produces reinforcement. According to

Seligman (1975), these behaviours occur when the individual perceives

that responses are independent of reinforcement. The individual

thinks that responding will be ineffective and this reduces incentive

to initiate instrumental responses. Also, as the individual perceives

responding to be independent of reinforcement (a distorted cognition),

he or she finds it harder to learn that the responding can affect re-

inforcement. Thus, it becomes harder to learn in a task where res-

ponding does result in reinforcement. Basically, the individual ex-

pects to have no control over the environment and, therefore, stops

any effort to control it.[1]

Seligman has conducted many studies to demonstrate the validity

of his theory and they all follow a similar paradigm. Subjects are

exposed to an uncontrollable situation (for example, inescapable

noise, or shock, or failure on tasks such as anagram solving). Sub-

jects placed in these uncontrollable situations later fail to escape

noise or shock or solve the anagrams and they fail to learn from their

success. When the subjects are in this state, Seligman feels they

are comparable to depressed individuals, as the behaviours emitted

are similar to the behavioural symptoms of depressed individuals.

Seligman concludes that these deficits in initiative and cognitive

behaviours are produced by the perception that response and reinforcement

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[1]Very recently Seligman has introduced major modifications in his theory
by adding   concepts from attribution theory (Abramson, Seligman, &
Teasdale, 1978). These modifications were made after this study was
written.

are independent. The subject learns that he or she is helpless in controlling the environment, and hence, the label "learned helplessness".Symptoms which Seligman views as analogous to the symptoms of depressives have been produced in both animals and humans (Hiroto & Seligman, 1975; Miller & Seligman, 1975). Some studies in support of Seligman's theory are reviewed below.

These studies have pertinence in two areas relevant to the present study. Firstly, they produce empirical support for Seligman's theory. Secondly, they demonstrate the reaction of depressed and nondepressed individuals to success and failure. In the present research, subjects are exposed to positively- or negatively-toned interviewing styles. The positive style is similar to success on a task, since the subject is positively reinforced by success. The negatively-toned interview is similar to failure on a task, since the subject is negatively reinforced.

Loeb, Beck, Feshbeck, and Wolf (1964) found that experimentally manipulating superior and inferior performance on a task had an effect on the affective state and motivation of their subjects. Subjects who were led to believe that their performance was superior exhibited more self-confidence and were more willing to participate in further competition. Depressed versus nondepressed subjects were not found to be more affected by the experimental manipulation in terms of volunteering for further studies or of their social perception, but the depressed subjects feeling tone did suggest a trend to greater mood change. Also, there was a significant difference between depressed versus nondepressed individuals in their levels of aspiration after

the experimental manipulation.

Loeb, Beck, Diggory, and Tuthill (1967) reported that high depressed subjects were more pessimistic than low depressed subjects about success on the experimental tasks, since they gave lower probability of success estimates concerning the chance of attaining the goal. Also, they found that high depressed subjects rated their performance as poorer than low depressed subjects. Success experiences raised the level of aspiration in both groups. As level of aspiration can be considered a measure of motivation, the results suggest that if one demonstrates to a depressed person that success is possible, level of expectation will be raised as well. Lastly, Loeb et al. (1967) reported that high depressed subjects performed as well as low depressed subjects on the task, a finding which conflicts with reports of psychomotor retardation in depressives.

The relationship between depression and perception of reinforcement was investigated by Miller and Seligman (1973). According to Seligman's (1975) theory, depressives perceive reinforcement as independent of responding; thus, in skill tasks, depressed individuals should perceive reinforcement as more response-independent than nondepressed individuals. In skill tasks, their level of expectancy should be lower than nondepressed subjects', while in chance tasks their level of expectancy should be similar to that of nondepressed individuals. It follows that the more depressed the individual is, the greater the tendency to perceive reinforcement and responding as independent in skill tasks; thus depressed people should exhibit less change in expectancy level in skill tasks. Miller and Seligman (1973)

found that nondepressed subjects' expectancy changes are affected
more by skill tasks than are depressed subjects' levels of expectancy.
In skill tasks, depth of depression, as measured by the Beck Inven-
tory (1967), is associated with lower expectancy changes, while in
chance tasks depth of depression and expectancy level are uncorrelated.

Rotter (1966) demonstrated that subjects change their expectancy
levels for future success following reinforcement much more when they
perceive that reinforcement is contingent upon their responding than
when they view it as response-independent. The previous results plus
those of Rotter (1966) suggest that the smaller expectancy changes of
the depressed group on skill tasks are due to the depressed individuals
perceiving reinforcement in skill tasks as more response-independent
than nondepressed subjects. Rotter (1966) hypothesized that depressed
and nondepressed subjects perceive reinforcement in chance tasks as
independent of response. Since the depressed individuals were affected
signficantly less by the chance skill manipulation than were nonde-
pressed subjects, the author suggests that depressed individuals per-
ceived the reinforcement contingencies in the two tasks as similar,
whereas the nondepressed subjects did not. Also, as the depressed
and nondepressed subjects did not differ on the chance task, depres-
sion probably does not entail general pessimism, but rather a specific
distortion concerning consequences of skilled action.

Klein, Fencil-Morse, and Seligman (1976) investigated the rela-
tionship between learned helplessness, depression, and attribution
of failure. They utilized three groups in their study: depressed
controls; nondepressed subjects who underwent a pretreatment where

they were given unsolvable problems to induce learned helplessness symptoms; and nondepressed controls. They reported that depressed controls and pretreated nondepressed subjects demonstrated poorer performance in solving anagrams than did nondepressed subjects. Thus, by their pretreatment they had induced learned helplessness in initially nondepressed subjects. The authors then tested to see if attribution of failure would have any effect on these results. They found that for nondepressed subjects performance on the anagrams was the same regardless of any instructions given concerning blame for failure. For depressed and pretreated nondepressed subjects, however, deficits in performance were eliminated if they were instructed that their failure was due to the difficulty of the problem and not to their own incompetence. These results suggest that the performance of depressed individuals can be enhanced if they believe their failures are not due to their own incompetence. Seligman (1976) confirmed the results of Klein, Fencil-Morse, and Seligman (1976). He hypothesized that induced learned helplessness symptoms can be reversed by exposing subjects to situations over which they have control and in which they can succeed. He reported that by exposing his subjects to a therapy consisting of success at problem solving, the learned helplessness symptoms were reversed.

Jones, Nation, and Massad (1977) went one step further than the above research. They hypothesized that it should be possible to "immunize" a person against the symptoms of learned helplessness. Subjects were placed in three levels of success training, 0%, 50%, and 100%, and then placed in a situation which would normally produce

learned helplessness symptoms. Immunization was effective at the 50%
level but not at the 0% or 100% level. These results suggest that
prior stimulus history is important in regulating human helplessness
behaviour. The result that the 50% level was better than the 100%
level does not lend support to Seligman's theory, as it would predict
that the more success the less likely the individual is to react in
a helpless manner.

Summary

The research reviewed above demonstrates the relationship of
noncontent dimensions of speech to many variables. It suggests that
noncontent dimensions of speech may be influenced by group versus
dyadic situations, speech content, status of the interviewer, the
particular group being examined, and increases and decreases in the
components of the partner's verbal behaviour. Lewinsohn's work sug-
gests that depressed individuals are deficient in communicative skills,
in both content and noncontent dimensions, which results in them gaining
less positive reinforcement than normals from their social environment.
This, in turn, results in the maintenance of the depression.
Seligman's work posits that depression is induced when an individual
feels his/her responses are independent of reinforcement. This re-
sults in a disruption of motivation and distorted cognitions, where
the subject feels that responses are independent of reinforcement
resulting in a decrement in noncontent dimensions of speech. The
work done in the area of relating success and failure to depression
indicates that depressed individuals demonstrate less increases in

expectancy of success than nondepressed individuals on a task where
reinforcement is response dependent. On tasks where reinforcement is
response independent , depressed and normals do not differ. These
results suggest that depressed individuals tend to perceive reinforce-
ment as response independent, and thus engage in less noncontent
dimensions of speech.

Matarazzo and Wiens' (1972) work suggests noncontent dimensions of
speech can be influenced by many variables including group membership
and modifications of noncontent dimensions of speech by one of the
conversational partners. Lewinsohn's work indicates depressed indi-
viduals lack communicative skills, including noncontent dimensions
of speech. One hypothetical reason for the maintenance of this de-
ficit in noncontent dimensions of speech could be a lack of respon-
siveness to the social environment, due to the feelings of depression.
Seligman's work plus the studies on success and failure suggest that
depressed individuals are less influenced by reinforcement than are
nondepressed people.

Taken together the material reviewed in the introduction suggests
that depressed individuals are less affected by positive reinforcement
than are nondepressed individuals. Also depressed individuals are
less affected by negative reinforcement than nondepressed subjects.
These general findings should be reflected in the results of the pre-
sent study in the following manner. Overall, the depressed subjects
should differ from the nondepressed subjects in their mode of res-
ponding to the positive and the negative interview. Below is a list
of the measures used and of the predicted differences between the

depressed and nondepressed subjects in their mode of responding.

1) Duration of Utterance: less for the depressed subjects in
    each interview condition;

2) Reaction Time Latency: longer for the depressed subjects in
    each condition;

3) Interruptions: less for the depressed subjects in each condi-
    tion;

4) Reaction to Aversive Verbalizations: higher on agreements
    and on no response for the depressed subjects; lower for the
    depressed subjects on challenges;

5) Eye Contact: less for the depressed subjects in each condi-
    tion;

6) Nodding: less for the depressed subjects in each condition;

7) Smiling: less for the depressed subjects in each condition;

8) Hand Movements while Speaking: less for the depressed sub-
    jects in each condition.

CHAPTER 2

METHOD

General Overview

Female undergraduates were assigned to depressed or nondepressed

groups on the basis of their scores on several depression measures.

Subsequently, these subjects participated in an experimental inter-

view which contained either positive or negative verbalizations and

behaviours on the part of the interviewer. The videotapes of these

interviews were then scored for various verbal and nonvernal noncon-

tent dimensions of speech by the subjects.

Subjects

The subjects were 40 female undergraduate psychology students,

ranging in age from 18 to 21. Initially, subjects were obtained by

asking for female volunteers in psychology undergraduate classes.

The students were told the study consisted of two parts, and that

they were free to participate or not. They were also informed that

the first part of the study involved responses to two questionnaires,

and that the second part would consist of a half-hour interview con-

cerning their attitudes toward university life. They were told the

interview would be taped. Two hundred ninety-four female students

agreed to participate in part one and 107 agreed to participate in

the second part of the study. Forty of these subjects were assigned

to two groups, depressed and nondepressed, on the basis of their

scores on the Beck Depression Inventory (Beck, 1967) and the Depression

Adjective Checklist (Lubin, 1965).

Subjects in the depressed group were those students who had

scores of 9 or above ($\bar{X}$ = 14.35) (Miller & Seligman, 1973) on the

Beck Depression Inventory and 9 or above on the Depression Adjective

Checklist ($\bar{X}$ = 15.65). Nondepressed subjects were those students who

had scores of 2 or below on the Beck Depression Inventory ($\bar{X}$ = .55)·

and 8 or below on the Depression Adjective Checklist ($\bar{X}$ = 4.35).

Within these groups subjects were then randomly assigned to the two

experimental conditions (positive or negative interview). Both mea-

sures were used as the Beck Depression Inventory is sensitive to rela-

tively enduring symptoms of depression common among clinical popula-

tions while the Depression Adjective Checklist is sensitive to rela-

tively transitory depressive moods (Miller & Seligman, 1973).

As there was a gap of two weeks to a month before the subjects

were seen for the interview, the subjects were asked to fill out the

Depression Adjective Checklist again as well as the Multiple Affect

Adjective Checklist (Zuckerman & Lubin, 1965). Subjects had to score

9 or above ($\bar{X}$ = 11.9) on the Depression Adjective Checklist and 14 or

above ($\bar{X}$ = 17.9) on the Multiple Affect Adjective Checklist in order

to remain in the depressed group. To remain in the nondepressed group,

subjects had to score 8 or below ($\bar{X}$ = 2.95) on the Depression Adjec-

tive Checklist and 13 or below ($\bar{X}$ = 6.85) on the Multiple Affect

Adjective Checklist. This retesting was done to ensure the subjects

still fell within the criterion for the group they had originally

been assigned to. As a result of the retesting, 10 subjects who

originally scored as depressed and two who had scored as nondepressed

were dropped from the study as they were no longer in the group they has been placed in as a result of the initial assessment. New subjects who met the criterion replaced them.

Materials

Depression Measures: Upon initial contact with the experimenter, the Beck Depression Inventory was one of the two instruments used to measure depressed mood. The Beck Depression Inventory is a paper-and-pencil test of affective, behavioural, cognitive, and somatic symptoms characteristic of depressed mood. It consists of 21 sets of statements. Each set contains 4 to 6 statements arranged in levels which reflect increasing severity of depression. The subject circles one statement in each set, choosing the statement which most clearly approximates how he or she feels. Scores obtainable for each set of statements range from 0 to 2 or 3. Overall scores of severity of depression are obtained by adding together the scores in each set of statements. At any one administration a score of 0 to 61 is obtainable. High scores reflect depressed mood and low scores reflect lack of depressed mood. As stated earlier, the cut-off score for inclusion into the depressed group was 9 or above; subjects scoring 8 or below were placed in the nondepressed group (Miller & Seligman, 1973). The clinical cut-off score is 18 (Beck, 1967).

The Depression Adjective Checklist Form A (Lubin, 1965) was also used to measure depressed mood upon initial contact with the experimenter. (It was also used again, just before the experimental interviews to determine if subjects continued to meet the criteria for

depression.) This instrument is a brief paper-and-pencil test which measures depressed affect by subjects' self-report. It consists of 32 adjectives reflecting affect. Ten adjectives concern nondepressed affect and 22 deal with depressed affect. The subject circles all the adjectives which reflect how he or she is feeling at the moment. Overall scores of severity of depression are obtained by adding one point for every depression adjective circled and by adding one point for every nondepressed adjective not circled. Scores obtainable range from 0 to 32, with 0 corresponding to the lowest possible depression score and 32 corresponding to the highest possible depression score. As stated previously, the cut-off score for inclusion into the depressed group was 9 or above; subjects scoring 8 or below were placed in the nondepressed group.

The Multiple Adjective Checklist (Zuckerman & Lubin, 1965) was used to measure depressed mood before and after the interview. This instrument is a self-administered paper-and-pencil test which measures depression, hostility, and anxiety; in the present study, however, only the depression scale was of concern. The complete checklist consists of 132 adjectives reflecting the three affects; of these 20 adjectives reflect depressed affect and 19 reflect lack of depressed mood. Total scores of severity of depression are obtained by adding one point for every depression adjective checked and one point for every nondepressed adjective checked. Scores obtainable range from 0 to 39, with 0 corresponding to the lowest depression score and 39 to the highest possible depression score. The criterion for acceptance into the depressed group, just prior to the experimental

interview, was 14 or above; subjects scoring 13 or below were placed in the nondepressed group.

A product moment correlation was obtained for the different measures of depression used in the study. These correlations are shown in Table 1. All the correlations were quite high.

Dependent Measures: These were the verbal and nonverbal non-content dimensions of speech made by the subjects while they were participating in the experimental interview. Measures of verbal behaviour included: (1) Duration of Utterance: the total amount of time it takes the subject to emit all the words she is contributing to a particular unit of exchange. (2) Reaction Time Latency: the average of the duration of the time from the moment the interviewer terminates an utterance and the subject begins to comment. (3) Interruptions: the total amount of time of simultaneous speech where the subject interrupts the interviewer. The duration of the overlap constitutes the interruption (Matarrazo & Wiens, 1972). Measures of nonverbal behaviour included: (1) Eye Contact: the amount of time during which eye contact was present between the subject and the interviewer. (2) Smiling: the number of times the subject smiled . (3) Nodding: the number of times the subject nodded. (4) Hand Movements: the number of times the subjects engaged in illustrative hand movements.

Cronbach's coefficient alpha was used to assess the interrater reliability between the three scorers on the dependent measures. These coefficients represent the reliability of the sum

Table 1

Correlations between the Depression Measures

Used in the Study

Measure .	Correlation
Beck and DACL, total subjects (N=291)	.537
Beck and initial DACL (N=40)	.826
Beck and DACL administered before the interview. (N=40)	.881
Beck and MACL administered before the interview. (N=40)	.830
DACL and MACL both administered before interview (N=40)	.887
Initial DACL and DACL administered before interview (N=40)	.856

of the three individual ratings. They also operationalize the
reliability which removes the frame of reference of the raters
(Winer, 1971). Table 2 presents the results.

All of the resliability coefficients, except the positive/
negative portion of the duration of utterance, are quite high.
According to the raters, the low reliability on the positive/nega-
tive portion of the duration of utterance was caused by the comp-
lexity of the behaviour the raters were trying to rate during that
specific part of the interview.

The subjects' reactions to aversive verbalizations from the
interviewer were measured. This was done by computing the number
of times subjects agreed, had no response, or challenged aversive
verbalizations from the interviewer. Cronbach's coefficient alpha
was used to assess the interrater reliability coefficient of the
three scorers who scored the subject's reaction to the aversive ver-
balizations, made by the interviewers, during the negative interview.
The reliability for the three measures was as follows: agreements,
.868; no response, .973; challenges, .944. Again, these coefficients
are high and of acceptable levels.

Finally, affect before and after the interview was also measured
by means of the subject filling out the Multiple Affect Adjective
Checklist (Zuckerman & Lubin, 1965) before and after the interview.

Procedure

Subjects whose initial questionnaire scores met the criteria for
the depressed and nondepressed groups were subsequently contacted

Table 2

Alpha Coefficient on Dependent Measures

Measure	Coefficient
Duration of Utterance	
Total interview	.989
Neutral portion	.991
Positive/negative portion	.215
Reaction Time Latency	
Total interview	.969
Neutral portion	.969
Positive/negative portion	.944
Interruptions	.833
Eye Contact	.964
Nods	.971
Smiles	.953
Hand Movements	.957

by telephone and asked if they were still willing to participate in the second part of the study. An interview time was set up for those subjects who agreed to participate. This procedure was followed until 20 depressed and 20 nondepressed subjects, needed for the study, were collected. Approximately one-third of the students who were contacted on the telephone either refused to participate or failed to show up for the appointment. It was anywhere between two to four weeks after initial contact before potential subjects were contacted. Accordingly, when the subjects arrived for the interview, they were immediately asked to fill out the Depression Adjective Checklist, the Multiple Affect Adjective Checklist, as well as forms of consent to participate in the study and be videotaped. Only data from subjects who continued to meet the appropriate criteria were used in the subsequent analyses. The subject was then introduced to the interviewer and the experimenter explained that the interview would last one half hour and that it would cover only material pertaining to attitudes toward university life. The subjects were also told they could terminate the interview at any time if they so desired and that after the interview the experimenter would explain the rationale for the study and all the variables which were being measured. The experimenter then left the room and the interview began.

The Interview: For the interview, four female undergraduate psychology students, naive of the purpose of the study, were trained as interviewers. The choice of female interviewers for the female subjects avoided the creation of possible interactions attributable to gender. Interviewers were counterbalanced across the four

experimental groups to avoid the creation of possible interactions attributable to interviewer expertise.

Each interviewer underwent 20 hours of intensive training in order to minimize individual differences between them and to ensure that the correct amount of positive or negative reinforcement was expressed by each of them. Two tests were used to directly assess the adequacy of the interviewer's training for these two goals, an Adjective Checklist (see Appendix 1) and a Semantic Differential (see Appendix 2). The results of these tests (see Tables 8, 9, 10, 11 in the Results section of this study) suggest that the training was adequate to meet these goals. For the purpose of reliability checking a product moment correlation between the two scorers was obtained on both the Semantic Differential and the Adjective Check-list. On the Semantic Differential for the total interview the correlation was .94. For the neutral portion of the interview the correlation was .672 and for the positive/negative portion of the interview the correlation was .944. All three correlations were quite high.

Table 3 presents the correlations on the Adjective Checklist. On a two-tailed test all the correlations were quite high.

Each interview was of exactly 30 minutes duration, a period which has been demonstrated by Matarazzo and Wiens (1972) to be long enough to give a reliable index of verbal behaviour. The interview was structured in terms of content and emotional tone (see Appendix 3). The content focused on the subjects' attitudes concerning the university,

Table 3

Correlations between the Two Scorers on the Adjective Checklist

Measure	Correlation
The Total Interview	
Neutral	.958
Positive	.962
Negative	.941
The Neutral Portion of the Interview	
Neutral	.516
Positive	1.000
Negative	.447
The Positive/Negative Portion of the Interview	
Neutral	.846
Positive	.946
Negative	.983

their present progress, and future goals. This content was chosen as it has been shown to have a similar salience value for university students (Matarazzo & Wiens, 1972). Saliency of the content is important as verbal behaviour differs according to the salience value of the subject matter (Matarazzo & Wiens, 1972).

With respect to emotional tone, the interview was split into two 15-minute segments. The first 15 minutes was intended to be neutral in tone. Neither verbal nor nonverbal responses were to be given to the subject by the interviewer, and there was no eye contact. Eye contact was excluded as it could affect the noncontent dimensions of speech being measured (see page 8 of this study). The second 15 minutes was either positive or negative in tone. One-half of the subjects within each group (depressed, nondepressed) were randomly assigned to receive the positively-toned interaction, and the other half were assigned to receive the negatively-toned interview. During the positive condition, the interviewer smiled, nodded her head, and had a great deal of eye contact with the subject. She also agreed with everything the subject said. During the negative condition, the interviewer maintained eye contact, frowned, and disagreed with and criticized everything the subject said. The interviewers made equally long utterances to the subjects in both the positive and negative conditions and the same opportunity for eye contact was available in both conditions. The interview was videotaped, using one-half inch videotape, with the knowledge and consent of the subjects, for later analyses.

When the interview was over the experimenter returned and

requested the subject to again fill out the Multiple Adjective Check-

list. The point of the retest was to see if feelings of depression

changed as a function of the interview. The assumption here is that

subjects should show a decrease in depression under the positive

condition and an increase in depression under the negative condition.

The retest also served as a means of determining if mood, in addition

to behaviour, can be influenced by positive or negative interview

conditions. The subjects were then given a 10- to 15-minute debriefing

session by the experimenter. During this session the purpose of the

various measures was explained. The subjects were assured that the

answers they gave during the interview had no bearing on the comments

made by the interviewer. Subjects were also given the opportunity to

watch themselves on the TV monitor for five minutes.

Scoring: The videotape of the interview was scored by two dif-

ferent sets of scorers. The first set of scorers, 1 male and 1 female,

viewed 7½ minutes of the neutral condition and 7½ minutes each of the

positive and negative interview conditions. This was done to check

whether the interviewers were being neutral, positive, and negative to

the interviewees at the appropriate times. The scorers completed two

separate adjective checklists (see Appendix 1) and two separate semantic

differentials for each segment viewed (see Appendix 2). The second

set of three scorers, 1 male and 2 female, were used to measure the

various verbal and nonverbal behaviours of the subjects. They went

through 8 hours of training in how to score the videotape for the behaviours

being examined. The training was done to ensure interrater reliability

which as seen on page 29 was high on all dependent measures

except duration of utterance during the positive/negative portion
of the interview. All three scorers scored each interview.

CHAPTER 3

RESULTS

The main hypothesis was that the verbal and nonverbal behaviour of depressed and nondepressed subjects would differ in response to a negative versus positive interview. The relevant results will be presented in this chapter. Further, a number of findings relating to the effectiveness of the interviews and the validity of the results will be presented.

Relationship between Beck Depression Scores and Noncontent Speech Dimensions

Though not crucial to the purposes of the present investigation, product moment correlation coefficienct were computed between subjects' Beck Depression Inventory scores and two randomly selected measures of noncontent speech dimensions (Duration of Utterance and Frequency of Nodding) for each of the two fifteen-minute segments of the interview. None of the four correlations was statistically significant.

Tests of the Effectiveness of the Experimental Manipulation

Three different measures were used to ensure that the appropriate tone was being produced by the four interviewers: The Multiple Affect Adjective checklist, a second Adjective Checklist, and a Semantic Differential. The Multiple Affect Adjective Checklist was administered to the subjects before and after the interview. It was

used to gauge the mood changes of the subjects after the experimental interview. Tables 4 through 7 show the means of the depressed and nondepressed subjects for the positive and negative interview conditions and Figures 1 thought 4 are graphic representations of these results.

These results were analysed by means of a repeated measure design analysis of variance with subjects being the repeated measure (see Table 4).

There were three significant results. First, depressed subjects scored higher ($\bar{X}$ = 17.5) than nondepressed subjects ($\bar{X}$ = 7.95) on the Multiple Affect Adjective Checklist, $F(1,36)$ = 84.62, p < .01. Second as seen in Table 5a and Figure 1, there was a significant interaction effect in which nondepressed subjects exhibited an increase in depression following the interview while depressed subjects showed a slight change in the opposite direction, $F(1,36)$ = 10.98, p < .01. Third, there was another significant interaction in which subjects in the positive interview condition showed a decrease in depressed mood while subjects in the negative condition showed an increase in depressed mood, $F(1,36)$ = 25.80, p < .01 (see Table 5b and Figure 2). In addition the results in Tables 6 and 7 and Figures 3 and 4 are not significant, they should be noted as they clarify the direction of change found in the two significant interactions just reported. The results from Table 6 and Figure 3 suggest that depressed subjects may exhibit a slight

Table 4

Summary of Analysis of Variance of the Multiple Affect

Adjective Checklist Scores

Source	SS	df	MS	F	p
Total	2,919.95	79			
Between Subjects	2,614.95	39			
Depressed/Nondepressed(D)	1,842.05	1	1824.05	84.62	<.01
Positive/Negative Condition(P)	14.45	1	14.45	0.67	ns
DxP	0.45	1	0.45	0.02	ns
Between Subjects Error	776.00	36	21.56		
Within Subjects	309.00	40			
Before/After Scores (R)	9.80	1	9.80	2.39	ns
DxR	45.00	1	45.00	10.98	<.01
PxR	105.80	1	105.80	25.80	<.01
DxPxR	0.80	1	0.80	0.20	ns
Within Subjects Error	147.60	36	4.10		

Table 5a

Mean Scores on the MACL for Depressed versus Nondepressed

Subjects Collapsed Over the Positive

and Negative Interview

	Pre Interview	Post Interview
Depressed	17.9	17.1
Nondepressed	6.85	9.05

Table 5b

Mean Scores on the MACL for the Positive versus the

Negative Interview Collapsed Over the

Depressed and Nondepressed Subjects

	Pre Interview	Post Interview
Positive	13.1	11.5
Negative	11.65	14.6

Figure 1

Mean Scores on the MACL for Depressed versus Nondepressed

Subjects Collapsed Over the Positive

and Negative Interview
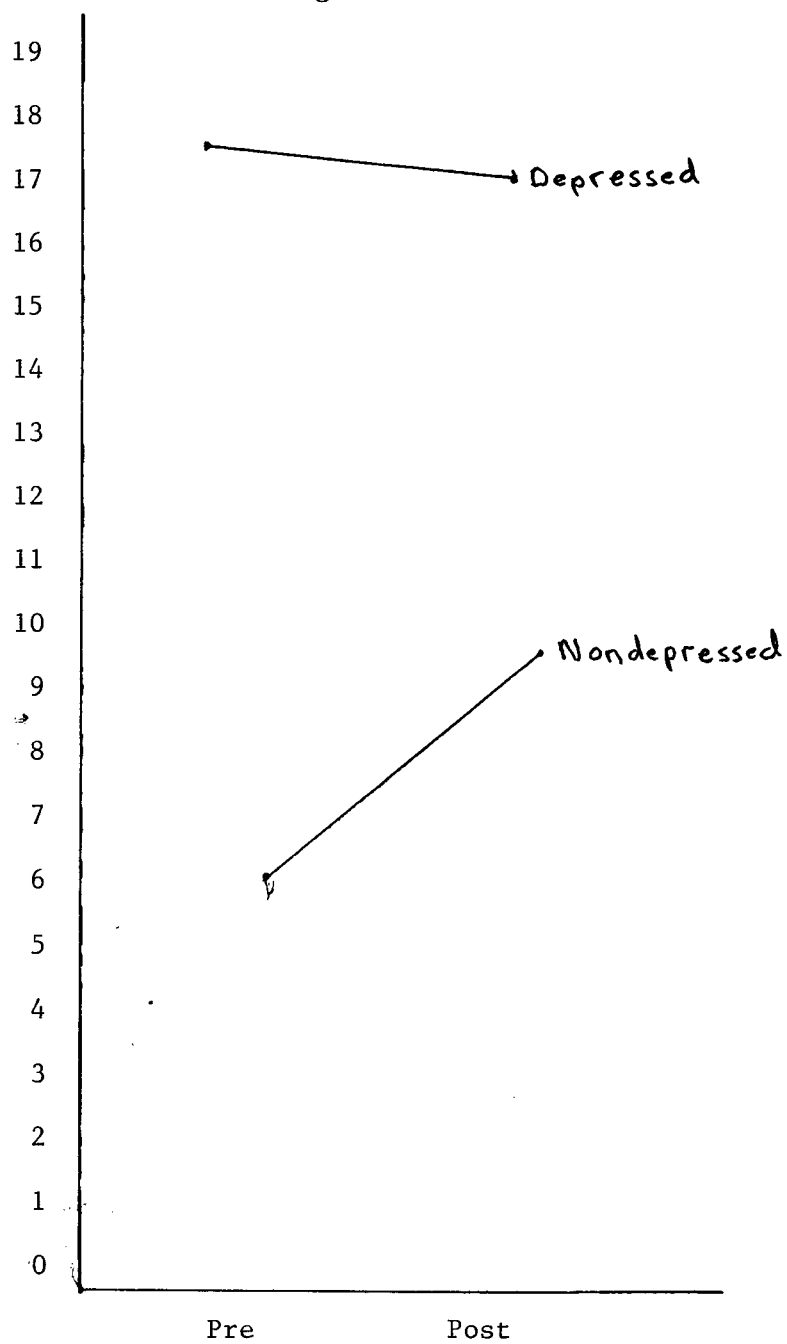
Figure 2

Mean Scores on the MACL for the Positive versus the

Negative Interview Collapsed over the

Depressed and Nondepressed Subjects

19
18
17
16
15
14 ·——————————————————————· Negative
13
12 ·
11 ·——————————————————· Positive
10
9
8
7
6
5
4
3
2
1
0

      Pre   Post

Table 6

Mean Scores on the MACL for the Depressed Subjects'

Reaction to the Positive versus the

Negative Interview

	Pre Interview	Post Interview
Positive	18.8	15.5
Negative	17.0	18.7

Figure 3

Mean Scores on the MACL for the Depressed Subjects'

Reaction to the Positive versus the

Negative Interview
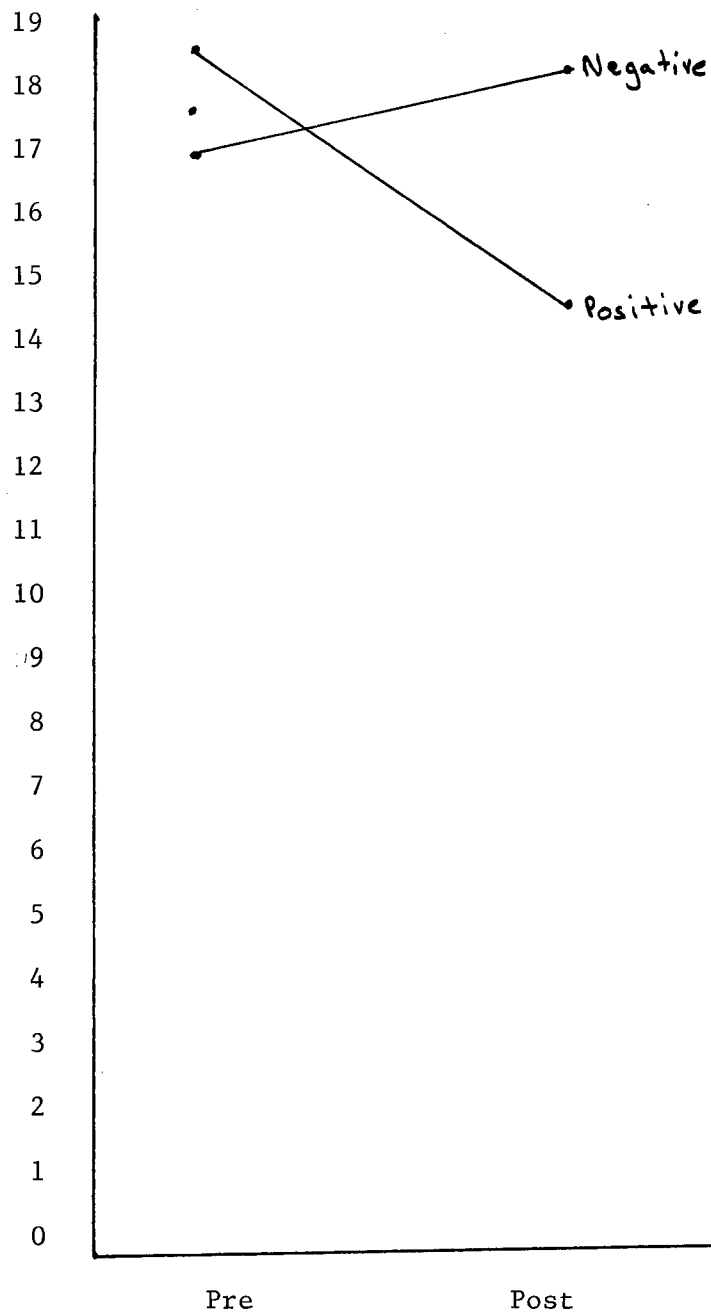
decrease in depressed mood when exposed to the positive treatment and

a slight increase in depressed mood when exposed to the negative

treatment. Table 7 and Figure 4 suggest that nondepressed subjects

may exhibit a very slight increase in depressed mood when exposed

to the positive treatment and an increase in depressed mood when ex-

posed to the negative treatment.

Taken together, these results suggest that the treatment condi-

tion might alter mood in depressed and nondepressed subjects and this,

in turn, reinforces the likelihood that the experimental interview

treatments had the desired effect.

An adjective checklist was also used to ensure the interviewers

were exhibiting the emotional tone appropriate to the section of the

interview they were doing. Tables 8 and 9 show these results.

Table 8 shows that the interviewer was being neutral during

the neutral section of the interview but also slightly negative.

Table 9 shows that during the positive interview condition the inter-

viewers were behaving appropriately, and during the negative inter-

view condition the interviewers were being negative and, to some

extent, neutral.

A semantic differential was the third measure used to assess

the effectiveness of the experimental manipulation. A scale of 1-7

was used for the semantic differential: 1 representing the most posi-

tive the interviewers could be rated and 7 representing the most

negative the interviewers could be rated. Table 10 represents the

results of this measure for the neutral portion of the interview.

To obtain these scores the two raters' individual scores for each

Table 7

Mean Scores on the MACL for the Nondepressed Subjects'

Reaction to the Positive versus the

Negative Interview

	Pre Interview	Post Interview
Positive	7.4	7.5
Negative	6.3	10.6

Figure 4

Mean Scores on the MACL for the Nondepressed Subjects'
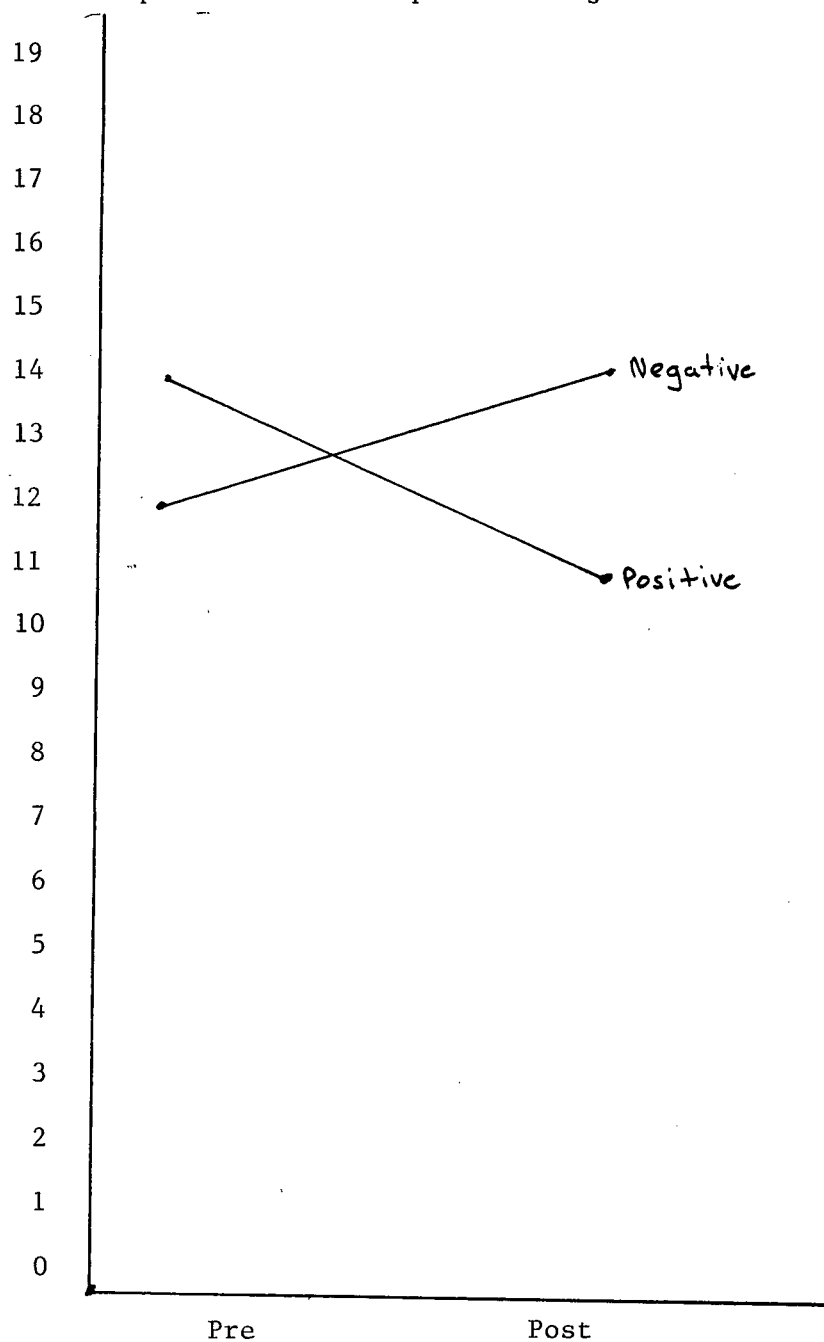
Reaction to the Positive versus the

Negative Interview
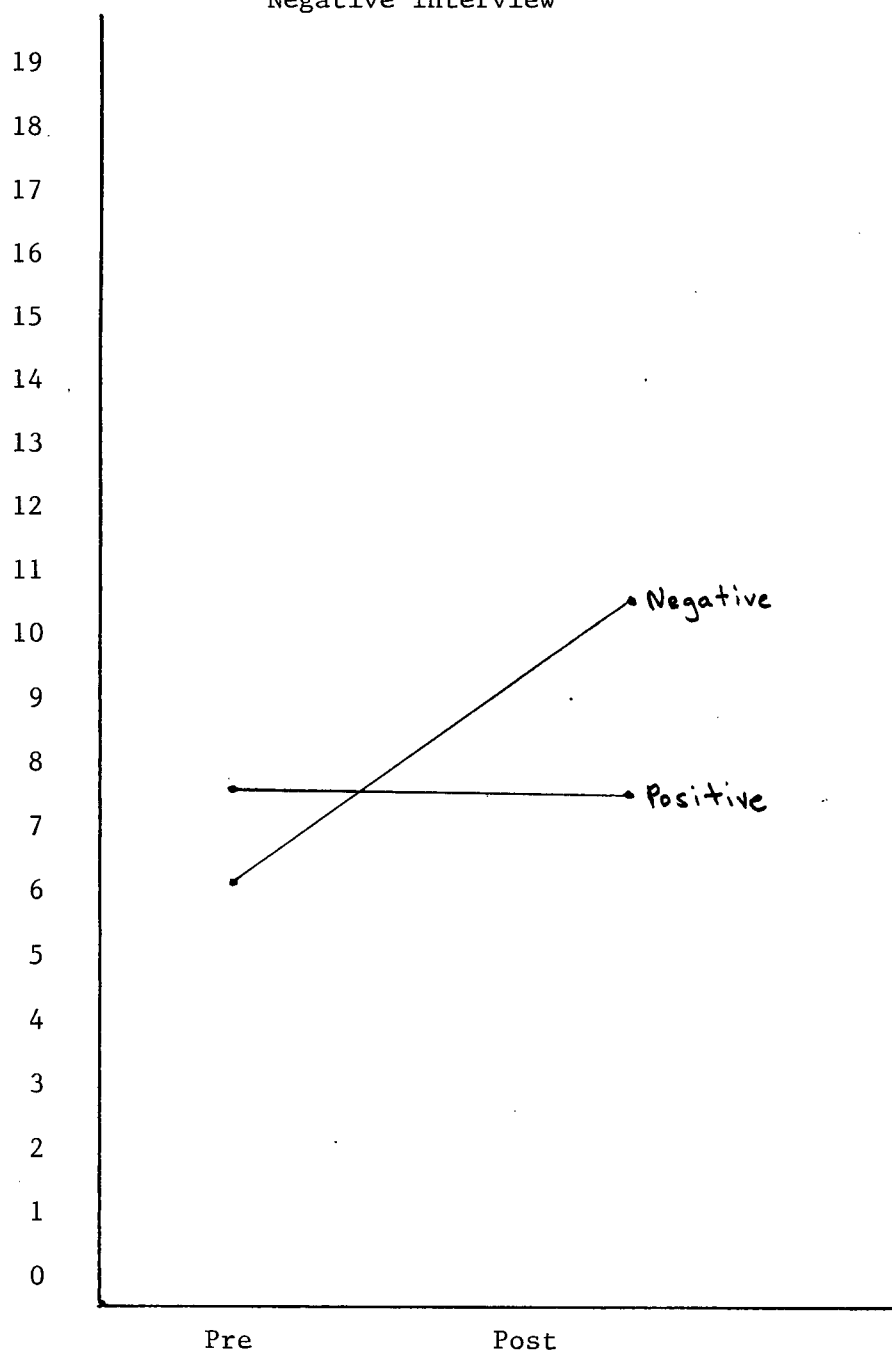
Table 8

Mean Number of Neutral, Positive, and Negative Adjectives

Checked During the Neutral Section of the Interview

Groups	Neutral	Positive	Negative
Depressed Positive	6.45	0.00	1.75
Depressed Negative	5.70	0.00	2.40
Nondepressed Positive	6.05	0.00	2.35
Nondepressed Negative	6.10	0.00	2.20

Table 9

Mean Number of Neutral, Positive, and Negative Adjectives

Checked During the Positive and Negative

Sections of the Interview

Groups	Neutral	Positive	Negative
Depressed Positive	1.00	6.50	1.50
Depressed Negative	1.50	0.00	5.92
Nondepressed Positive	0.25	7.70	0.00
Nondepressed Negative	1.60	0.00	7.20

Table 10

Scores of the Interviewers on the Semantic Differential

During the Neutral Treatment Condition

	Depressed	Nondepressed
friendly-unfriendly	6.65	6.65
pleasant-unpleasant	6.40	6.20
interested-uninterested	6.80	6.63
emotional-unemotional	6.83	6.53
kind-cruel	3.90	4.15
soft-hard	4.13	3.98
warm-cold	6.25	6.38
supportive-unsupportive	6.55	6.00
understanding-critical	4.00	4.18
positive-negative	4.55	4.35
sociable-unsociable	6.20	6.13
considerate-inconsiderate	5.50	4.98
empathetic-unempathetic	4.38	5.98

adjective pole, for each subject, were averaged. Then the average for the depressed and nondepressed groups were obtained.

Table 10 shows that the interviewers were not being completely neutral: some adjectives suggest a negative rather than neutral emotional tone. When the subjects and the two raters were asked what made the neutral interview negative they reported it was the lack of eye contact between the interviewer and subject. These results are partially in keeping with the results on the adjective checklist. The negativeness in the neutral portion of the interview was not reflected as much in the adjective checklist as in the semantic differential.

Table 11 represents the semantic differential results for the positive and negative treatment conditions. It shows that the interviewers were being positive or negative as had been required by their respective interview conditions. These results were analyzed by means of a 2x2 analyses of variance (see Appendix ᵮ). For each adjective pole there was a significant difference between the negative and positive conditions. In addition there were three significant differences between depressed and nondepressed subjects: these differences were on the soft-hard, considerate-inconsiderate, and warm-cold adjective poles. There were no significant interactions.

Taken together these results demonstrate the experimental manipulation was effective. Changes in mood by the subjects and behaviours by the interviewers except in the neutral portion of the interview were found as had been expected.

Table 11

Means of the Interviewers on the Semantic Differential

During the Positive and Negative Treatment Conditions

	Depressed Positive	Depressed Negative	Nondepressed Positive	Nondepressed Negative
friendly-unfriendly	1.30	6.80	1.15	6.05
pleasant-unpleasant	1.25	6.65	1.20	5.85
interested-uninterested	1.35	3.35	1.15	3.85
emotional-unemotional	3.55	4.80	3.65	5.00
kind-cruel	1.80	5.00	1.45	4.50
soft-hard	3.45	5.70	3.05	4.85
warm-cold	2.35	6.10	1.30	5.85
supportive-unsupportive	2.00	5.40	1.65	5.20
understanding-critical	1.75	5.90	1.50	5.45
positive-negative	3.15	3.75	3.05	4.50
sociable-unsociable	2.05	5.00	1.70	5.50
considerate-inconsiderate	2.55	5.75	1.75	5.15
empathetic-nonempathetic	2.95	3.90	3.15	4.50

Homogeneity of Variance

The results of the dependent measures were analysed by means of

a 2x2 between subjects analyses of variance. Due to large differences

in some of the standard deviations on the dependent measures, tests

for homogeneity of variance were done to ensure that differences

found between groups were not attributable to differences of variance

between them. In each case depressed and nondepressed subjects' scores

were tested over the two experimental conditions (positive and nega-

tive). The only significant difference found was between interrup-

tions in the negative portion of the interview where the nondepressed

subjects had the higher variance.

Verbal and Nonverbal Responses of Depressed and Nondepressed Subjects

under Positive and Negative Interview Conditions

The main hypotheses of the experiment were that depressed subjects

would differ from nondepressed subjects on seven verbal and nonverbal

noncontent dimensions of behaviour in response to the positive or

negative interview conditions. The relevant means and standard devia-

tions for the seven dependent measures are shown in Table 12.

These results were analyzed by means of 2x2 between subjects'

analyses of variance with group membership (i.e., Depressed versus

Nondepressed) and interview conditions (i.e., Positive versus Nega-

tive) as the main effects (see Appendix S for the summary tables of

these analyses). Contrary to the hypotheses, there was only one

significant difference between depressed and nondepressed subjects:

the depressed subjects spent less time interrupting ($\overline{X}$ = 16.23)

Table 12

Means and Standard Deviations for Dependent Measures

Dependent Variable	Depressed Positive	Depressed Negative	Nondepressed Positive	Nondepressed Negative
Duration of Utterance (in seconds)	451.47 * (156.63)	404.41 (160.09)	438.88 (94.62)	362.50 (188.53)
Reaction Time Latency (in seconds)	1.51 (0.77)	1.70 (0.40)	1.46 (0.63)	1.69 (0.62)
Length of Interruptions (in seconds)	14.09 (15.40)	2.14 (3.80)	20.76 (17.75)	14.31 (13.72)
Length of Eye Contact (in seconds)	117.40 (67.76)	40.59 (49.73)	130.20 (26.07)	51.53 (28.70)
Frequency of Nodding	35.40 (31.35)	8.77 (4.91)	49.86 (26.85)	18.01 (11.01)
Frequency of Smiling	50.57 (36.15)	22.33 (22.13)	74.53 (31.72)	17.97 (11.21)
Frequency of Hand Movements	19.91 (26.72)	12.96 (13.21)	27.49 (26.53)	17.52 (34.58)

*Standard deviations are in parentheses.

than the nondepressed subjects ($\overline{X}$ = 35.07) in the positive and nega-
tive conditions combined, $F(1,36)$ = 4.70, p < .05. There were no
significant interview by group membership interactions. On the
other hand, the analyses showed that for four of the eight response
measures there were significant differences between the two inter-
view conditions. These differences were fewer interruptions in the
negative rather than the positive interview condition ($\overline{X}$ = 16.45 and
34.85, respectively), $F(1,36)$ = 4.49, p < .05; less eye contact in
the negative as opposed to the positive interview condition ($\overline{X}$ = 92.12
and 247.6, respectively), $F(1, 36)$ = 28.19, p < .01; less smiling in
the negative rather than the positive interview condition ($\overline{X}$ = 40.30
and 125.1, respectively), $F(1,36)$ = 24.56, p < .01; and less nodding
in the negative as opposed to the positive interview condition
($\overline{X}$ = 26.78 and 85.26, respectively), $F(1,36)$ = 18.5, p < .01.

Subjects' Reactions to the Interviewer's Remarks During the Negative Interview Condition

During the negative interview, the subjects' reactions to the
critical remarks made by the interviewer were scored in three cate-
gories: agreements with the critical statements; challenging the
critical statements; or making no response to the critical state-
ments. It was hypothesized that there would be higher rates of
agreement and no response, and a lower rate of challenging or dis-
agreeing for depressed subjects. The relevant means and standard
deviations for all three categories are shown in Table 13.

These results were analyzed by means of one-way analyses of

Table 13

Means and Standard Deviations of Subjects' Responses

to the Interviewer's Critical Remarks During

the Negative Interview Condition

Responses	Mean	Standard Deviation
Challenges		
Depressed	8.82	3.68
Nondepressed	7.43	3.66
Agreements		
Depressed	2.98	1.90
Nondepressed	3.50	3.01
No Response		
Depressed	4.81	4.11
Nondepressed	7.46	7.17

variance. Contrary to the hypotheses, there were no significant differences between the depressed and nondepressed subjects on any of the three response categories.

CHAPTER 4

DISCUSSION

The aim of the present study was to examine the verbal and non-
verbal behaviours of depressed and nondepressed individuals, in order
to compare their responses to a positive emotionally-toned dyadic in-
teraction versus a negative emotionally-toned dyadic interaction.
The measures were generated on the basis of their relevance to non-
content dimensions of verbal and nonverbal communicative skills or
social skills (Matarazzo & Wiens, 1972). The overall strategy en-
tailed the statistical analyses of the data based on the coding of
interpersonal behaviour of depressed and nondepressed individuals
under positive versus negative interview conditions. Additional
questionnaire data were used as checks on the effectiveness of the ex-
perimental interview manipulations.

Taken in their totality, the results did not support the hypo-
theses under investigation. There were no significant differences
between the depressed and nondepressed individuals, in their verbal
and nonverbal behaviours, under positive versus negative interview
conditions.

Thus, the results suggest that, within the sampling and contex-
tual limits of the present experiment, depressed individuals are as
socially skilled as nondepressed individuals in their verbal and non-
verbal communicative behaviours. These results are in contrast to the
predictions made on the basis of the theories and research on depres-
sion reviewed earlier (Seligman, 1975; Lewinsohn, 1973, 1974;

Matarazzo & Wiens, 1972). As the present results conflict with the

general findings reported in the introduction,

this may suggest that the notion of depressed individuals being less

socially skilled than nondepressed individuals is not as general or

pervasive in situations as previously assumed.

It could also be argued that the hypothesis under investigation

was not supported because of ineffective experimental manipulations.

This, however, does not appear to be the case. As stated earlier,

several checks of the experimental manipulations were included.

The Multiple Affect Adjective Checklist strongly indicated that sub-

jects in the positive interview condition decreased in depressed mood

while subjects in the negative condition increased in depressed mood.

These results suggest that the experimental manipulation was indeed

effective in changing depressed mood. Moreover, the interview condi-

tions did have a differential impact on the subjects' responses, re-

gardless of their depressed or nondepressed status. In addition, the

scores of the subjects on the Multiple Affect Adjective Checklist and

the Adjective Checklist given right before the interview, confirmed

that all subjects were in the appropriate group, depressed or non-

depressed, as defined by the experimenter's criteria for group member-

ship. The results of the Adjective Checklist and the Semantic Dif-

ferential demonstrated that the interviewers did behave in neutral,

positive, and negative fashions at the appropriate times. The inter-

rater reliability on the scorers' ratings showed that they were very

similar in their rating of the interviewees' behaviours. Viewed to-

gether, these experimental checks suggest that the negative findings

did not result from procedural flaws.

As the results of the present research disagree with past research findings, a closer scrutiny is called for. One possible explanation is that college students rather than clinically depressed subjects were used in this study. The relatively transitory nature of depression in college students could be a completely different entity from clinical depression. In fact, a number of researchers have questioned the use of the Beck Depression Inventory for diagnosing depression. Depue and Monroe (1978) state that the use of the Beck Depression Inventory to identify depression is a misuse. It was originally designed to measure the severity of depression with individuals who had already been diagnosed as depressed. They assert that elevated scores on the Beck Depression Inventory could be due to a number of independent factors, such as sadness or loss of self-esteem, only one of which is depression. Also the scale was originally designed to be used by a clinician and not as a self-rating scale which takes into account the individual's subjective estimate of his/her symptoms and these ratings could reflect a different dimension of depressive disorders from those of clinicians' ratings. Depue and Monroe (1978) also feel the Beck Depression Inventory is too weighted by subjective feelings and does not include enough somatic and behavioural symptoms, which they feel are better at discriminating between mild depression in relatively normal individuals and a more severely depressed clinical population. If this is the case, basing a quantitative view of depression in college students on the Beck Depression Inventory scores would be questionable. Weissman et al. (1975), Zung (1972), Hogarty and Katz (1971), and Katz (1970) concur

with Depue and Monroe's (1978) criticisms. They found behaviour and somatic complaints to be the best discriminators between clinical depression and normal depression and unhappiness. They suggest that the Beck Depression Inventory's heavy loading on subjective feeling may make it a poor discriminator between normal individuals in a state of sadness, unhappiness, and loneliness and a moderately depressed population. Costello (1978) also states that the Beck Depression Inventory may be inappropriate for use with college students as it was designed for a clinical population. Smolen (1978)   questions the validity of using the Beck Depression Inventory with college students and whether the nominally depressed subjects in the learned helplessness studies were depressed in a clinical sense. The questionable validity in using the Beck Depression Inventory to diagnose depression in the present study was strengthened by the fact that ten subjects originally scoring as depressed and two scoring as nondepressed on the Beck Depression Inventory no longer scored as depressed and nondepressed when brought in for the experimental interview. Given the above reservations on the part of the researchers, it is possible that the subjects classified as depressed were not depressed in a clinical sense and this could account for the lack of differences found in the present study. Nevertheless, it should be remembered that the Beck Depression Inventory was not the only measure used to select depressed and nondepressed subjects, and both Lewinsohn (1973, 1974) and Seligman (1975) used college students in their studies, and found differences between depressed and nondepressed subjects in their verbal communication skills.

Lewinsohn's (1973, 1974) theory and research results were one of the bases for the hypothesis of the present research. In most of his studies and the studies of other researchers based on his theory of depression, a definite deficit in verbal communicative skills was found. But a few studies based on this theory did find no differences between depressed and nondepressed subjects. Schrader and Craighead (Note 2) reported finding no difference between depressed and nondepressed individuals in frequency of responding and timing of reinforcement during verbal interactions. Lewinsohn, Lobitz, and Wilson (1973) did a study to examine the depressed individual's sensitivity to aversive stimuli. They found depressed individuals were more sensitive while the stimulus was occurring, but not before or after its occurrence. Relating this result to the present study, one would not expect a change in depressed college students' verbal and nonverbal noncontent dimensions of speech during the negative portion of the interview. These studies suggest possible flaws in Lewinsohn's (1973, 1974) theory and research upon which the hypotheses of the present study were partially based, and as such could account for the lack of differences found between the depressed and nondepressed subjects' behaviours during the interview.

Seligman's (1975) theory of depression, upon which the hypotheses of the present study were based, had been examined more closely in a series of studies published in 1978. Seligman himself recognized inadequacies in his own theory and has presented a new theory on the development of depression, using attribution theory (Abramson, Seligman, & Teasdale, 1978). This theory was published after the

present research was completed.

Costello (1978) points out that although cognitive deficits have been found in depressives, Seligman had produced no proof that the deficit is caused by the factors Seligman suggests. Rizley (1978) did a study using a novel achievement related task. He found that in retrospect causal description for reinforcement depressed subjects did not view their behaviour and consequent events as any more causally unrelated than did nondepressed subjects. Nor did they self-attribute any less or more control over, or causal responsibility for re-inforcement than did nondepressed subjects. Rizley (1978) also found depressed subjects did not behave as though they were helpless, on the contrary they rated theor own actions as a more important influence on another individual than did nondepressed subjects. Abramson, Garber, Edwards, and Seligman (1978) found differences in expectancy between depressed and nondepressed individuals, as Seligman's theory would suggest, but they did not find differences in the subjects' perceived control. These results are contrary to results expected from Seligman's theory,suggesting expectancy changes may be due to other factors than response independence. Willis and Blaney (1978) found depressed college students perceived themselves in greater control of task outcome than nondepressed college students. They also found an index of noncontingency was not influenced by a learned helplessness manipulation, but it did increase depressive affect. These results are consistent with those found in the present research. They also found that although depressed subjects demonstrated an inferior level of problem solving this was not accompanied by reports of perceived noncontrol over outcome.   All of   these   studies   raise

questionsas to the validity of Seligman's (197$) theory where the basic

premise is that depressed individuals perceive no relationship be-

tween their behaviour and outcome. Thus a reason for the lack of dif-

ference between depressed and nondepressed subjects in the present

study could be due to inadequacies in Seligman's (197$) theory and

research.

Sacco and Hokanson (1978) found that once the experimenter was

removed from the measurement situation, the total expectancy change

exhibited by the depressed subjects tended to increase. In the private

condition, depressed subjects manifested significantly greater expec-

tancy changes than nondepressed subjects. These results on inter-

personal factors influencing experimental results may be of importance

in accounting for the findings of the present research. In the present

study an experimenter, the interviewer, was always present and it is

possible that this continued presence led to the lack of differences

found between the depressed and nondepressed subjects during the

experimental interview.

It is also possible that the subjects did not take the interview

seriously and this influenced the results. Most of the subjects had

participated in previous psychological experiments. When talking to

the subjects after the interview, the experimenter did find that many

of them, and especially those in the negative interview, said that

they found the interview funny and that they had been inclined not to

take the interviewer's remarks seriously. Smolon (1978) did a study

where depressed and nondepressed subjects' expectancy, mood, and

performance on skill and chance tasks were manipulated. Contrary to

the studies by Miller and Seligman (1973, 1976) and Miller and Seligman

(1975) they found no differences between the depressed and nondepressed

subjects on the tasks. They suggest the failure to replicate the

studies was due to the situation being of little importance to the

subject. Roth and Kubal (1975) and Klien et al (1976) both found the more

important the task was perceived to be, the more helplessness was pro-

duced when the task was unsolvable. The lack of differences found in

the present study between depressed and nondepressed subjects could

be due to the subjects feeling the task was unimportant.

Other more minor considerations could also have led to the lack

of differences between depressed and nondepressed subjects found in

the present research. Since mood was affected by the manipulations

(e.g., the results from the Multiple Affect Adjective Checklist), it

is possible that had the interview been longer the subject's behaviour

might have changed in the predicted direction. It is also possible

that the experimental situation was too artificial. The videotape

apparatus coupled with the interviewer asking questions from a written

script may have affected subjects' responses. Also, the neutral

interview, which every subject went through, was slightly negative and

may thus have affected the subjects' responses to the second part of

the interview.

Though there are a number of potential explanations for the

lack of differences between depressed and nondepressed subjects in the

present experiment, the present results do suggest that depressed

college students are not less skilled in communication skills than

nondepressed college students. This would in turn suggest that, contrary to some recent hypotheses, depressed "normal" individuals are not broadly deficient in communicative skills.

Although no positive results were found in the present study, a future study, using a clinically depressed population, and a longer interview, could probably reveal some significant differences in depressed and nondepressed individuals' reactions to positive and negative interactions. If such differences were found they could have significant implications for the treatment of depressed individuals.

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Appendix 1

The Adjective Checklist Used to Gauge if the Interviewers
were Showing the Appropriate Emotional Tone
in the Three Interview Conditions

Please read each adjective quickly and put a check beside the
ones you would consider to be descriptive of the interviewer. Do not spend
too much time on any one adjective. Check as many or as few as you wish.

____ neutral	____ enthusiastic
____ critical	____ snobbish
____ considerate	____ mild
____ obnoxious	____ cool
____ reserved	____ sociable
____ apathetic	____ hostile
____ praising	____ rigid
____ unkind	____ boring
____ complaining	____ arrogant
____ indifferent	____ friendly
____ understanding	____ uninterested
____ unemotional	____ pleasant
____ good natured	____ dull
____ aloof	____ warm
____ kind	____ unfriendly

Appendix 2

The Semantic Differential used to Gauge if the Interviewers

were Showing the Appropriate Emotional Tone

During the Three Interview Conditions

Each set of adjectives below represent opposite ends of a contin-
uous scale. Using a range of 1 - 7, please rate the interviewer's behaviour.
On this scale:

1 = very

2 = quite

3 = a bit

4 = neither one or the other (neutral)

5 = a bit

6 = quite

7 = very

If you think a set of adjectives are not descriptive of the interviewer
then place a line through them.

	1	2	3	4	5	6	7	
friendly								unfriendly
pleasant								unpleasant
interested								uninterested
emotional								unemotional
kind								cruel
soft								hard
warm								cold
supportive								unsupportive
understanding								critical
positive								negative
sociable								unsociable
considerate								inconsiderate
empathetic								nonempathetic

Appendix 3

INTERVIEW

A. Neutral Condition

1.   So I can get an impression of where you are at could you tell me,
     generally speaking, what you think of U.B.C.?

2.   Why did you choose to come to U.B.C. instead of a junior college or
     another Canadian university?

3.   What do you think about the physical environment of the University
     from an aesthetic or artistic point of view?

4.   What do you think about the physical environment of the University
     from a practical point of view? For example, in terms of getting to
     classes on time?

5.   Do you think the transportation facilities, busses and cars, are
     adequate to meet the needs of students who travel to and from University
     each day, or do you think improvements can be made?

6.   How do you feel about the present parking facilities for students?
     I guess most undergraduates have to park in B or D lot, both of which
     are quite far away from the buildings the classes are held in.

7.   What do you think of the idea of U.B.C. as a <u>walking</u> campus? This rule
     came into effect a couple of years ago. Do you think it was a wise
     decision?

8.   There are a number of cafeterias on campus run by one company. What
     do you think of these facilities in terms of atmosphere and quality
     of food?

9.   Given the atmosphere and quality of food, do you think the prices
     charged are fair?

10. What do you think of the idea of the University subsidizing these cafeterias so food would be cheaper?

11. What do you think about your classrooms? Do you feel they are okay, or that they should be updated a bit to make them more comfortable?

12. The use of audio-visual equipment for teaching is becoming more popular. Do you feel your professors should make use of these facilities more?

13. IF YES: How should they be used?

    IF NO: Why don't you think this would be helpful?

14. What about study space? Do you feel the University has made enough room available for students to work in?

15. We have three large libraries at the University. Do you find these facilities are adequate in meeting your needs for books and articles you have to read?

16. There are a number of clubs and teams students can join at U.B.C. Do you feel that first-year students are aware of this and given easy access to these facilities?

17. IF CLUBS JOINED ARE MENTIONED: Are the activities you mentioned the only ones you've joined since coming to U.B.C.?

    IF NO MENTION IS MADE OF JOINING CLUBS: Have you joined any of the clubs or athletic teams since starting university?

18. IF SOME ARE JOINED: Why did you decide to join these particular activities as opposed to others offered?

    IF NONE IS JOINED: What are your reasons for not joining any of the clubs or teams?

19. Outside of clubs and athletics do you use any other of the University's social facilities, such as attending the dances or Pit?

20. IF YES: How do you find these?

 IF NO: Why not?

21. Money is often a difficulty for students. Do you feel more provision

 should be made for the financial support of students?

22. IF YES: In what form? Loans? Bursaries? Jobs?

 IF NO: Why not?

 DON'T KNOW: Well, what about students who are in financial need?

23. Do you think the fees for attending University are too high?

24. IF YES: How do you think we can get around this problem?

 IF NO: What about students who can't attend the University because

 they can't afford the fees?

25. What about the cost of supplies such as textbooks and the like. Do

 you think the prices are too high and that perhaps textbooks should

 be made available in the library instead of students having to buy them?

26. The cost of living in Vancouver is extremely expensive if you are not

 living at home. Do you think more residences should be built so stu-

 dents could be provided with low-cost housing?

27. IF YES: Why?

 IF NO: Why not?

28. What about the student health services provided on campus? Do you

 think they are adequate?

29. What about the student counselling service? Do you think it fulfills

 the needs of students in terms of helping them decide what courses

 they should take, or in terms of helping them work out any difficulties

 they may be encountering in trying to adjust to the University?

30. Many universities work on a semester system, where you can attend one

 semester, take a break, and then return. Do you think U.B.C. should

change to this system?

31. IF YES: Why?

IF NO: Why not?

32. Another aspect of the semester system is that of offering half-year as opposed to full-year courses. What do you think of this idea?

33. IF GOOD: Why?

IF NOT: Why?

34. Could you review for me a bit of your history concerning when you first thought of coming to university until you made your final decision?

35. IF PARENTS NOT MENTIONED: What about your parents' feelings toward your attending university? Do they approve? Disapprove?

IF PARENTS ARE MENTIONED: You mentioned a bit about your parents' feelings toward your attending university. Could you expand on this a bit more for me?

36. IF PARENTS' INFLUENCE ON DECISION TO COME NOT MENTIONED: Do you feel their attidude toward your attending university had an influence on your decision to come?

IF PARENTS' INFLUENCE ON DECISION TO COME IS MENTIONED: You mentioned your parents' attitude had an influence on your attending the University. How much do you think it contributed to your decision to come?

37. IF HAVEN'T SAID WHY PARENTS HAVE OPINION: Do you know why they hold a (positive, negative) opinion on your attendance?

IF HAVE SAID WHY PARENTS HAVE OPINION: Could you expand a bit more on why they hold this (positive, negative) opinion on your attendance?

38. In anticipating entering university, what were some of the things about it which interested you?

39. IF ALTERNATIVES TO UNIVERSITY WERE MENTIONED EARLIER: You mentioned

before that you considered a few other possibilities other than university upon completion of high school. Could you expand a little further and tell my why you didn't follow them up?

IF ALTERNATIVES WERE NOT MENTIONED EARLIER: In addition to university did you consider any other possibilities after completion of high school? (If not, why?) (If so, can you tell me why you didn't choose them?)

40. Many students take a year off during the four years it takes to obtain a bachelor's degree. Do you think you will do this?

41. IF YES: Why?

 IF NO: Why not?

 IF DON'T KNOW: Can you think of any reasons why it might be a good idea?

42. What courses are you presently taking, and how many hours of lecture time do they consume each week?

43. What made you choose these courses as opposed to others offered to undergraduates?

44. Do you have some goals in mind as to what you will do with your bachelor's degree after you obtain it?

45. IF YES: What are they? And why did you choose these particular goals?

 IF NO: Could you speculate on what you might do?

– TIME: 15 MINUTES –

B. Positive Condition

1. Generally speaking, what were your expectations concerning university when you first came?

   RESPONSE: These seem fair and reasonable.

2. Would you say these expectations have been fulfilled?

   RESPONSES:

   IF YES: That's good to hear. It is probably the result of you being reasonable in your expectations and willing to compromise when they weren't fulfilled.

   IF YES & NO: That's pretty natural for any new situation. One rarely gets everything they want and it sounds like you accept this in a mature fashion.

   IF NO: I can empathize with what you are saying. The university, like most large institutions, seems to expect the student to fit into their mold, rather than trying to accommodate to at least some of the students' needs.

3. IF DON'T MENTION CHANGING EXPECTATIONS: Do you feel after a year of experience with university you have changed your expectations and if so, how?

   IF MENTION CHANGED EXPECTATIONS: You have mentioned you have changed your expectations since entering university - could you elaborate a bit more on how they have changed?

   RESPONSES:

   NO CHANGE: Well, that's nice to hear. So many students complain of disillusionment after a year of university. It shows a mature attitude when you accept reality.

CHANGE GENERALLY POSITIVE: Well, that's good to hear. It's so rare that students appreciate the university, rather they tend to complain. It's a sign of maturity when you appreciate what you have.

CHANGE YES AND NO: Well, that's natural. Like a mature person, you are accommodating to the situation by changing your expectations. It's amazing how many students don't realize that all new situations require accommodation.

CHANGE NEGATIVE: Well, I can empathize with your situation. Yours is a natural response to an often cold inhuman environment where little attention is paid to the individual needs of the students.

4. Do you feel the university is academically stimulating? By this, I mean do you feel it motivates students to work and learn?

RESPONSES:

YES: Your response suggests you will do well at university. If you feel it motivates you to work and learn, then you will. It's those students who don't feel this way who run into trouble.

YES AND NO: That's a reasonable answer. I know I feel that way too; in some ways you feel encouraged to learn, in others you don't.

NO: I can really empathize with your position. I know I have felt that the university makes little effort to foster learning; no one seems to care.

5. We have already talked a little about the social life at U.B.C. and I would like to follow the subject through a bit more. Do you feel that more opportunities should be opened for students to meet each other?

RESPONSES:

IF YES: I agree with you. I know I found it hard to meet peope during my first couple of years at university.

IF NO: That's good to hear. It suggests you realize that U.B.C.'s function is not to provide a social life for students.

6. Have you found that since attending university you have lost touch with your high school friends? And if so, does this bother you?

RESPONSES:

YES/YES AND NO/AND BOTHERS ME: I know what you mean. For me it seems there is never enough time to do my work, keep in touch with my university friends and also my high school friends. Sometimes I really miss them.

YES/YES AND NO BUT DON'T CARE: I had the same experience of losing touch with high school friends. But I took the attitude I guess you have, that as one changes their life circumstances, one's circle of friends change too and that's life.

NO: That's good to hear. Many people seem to drop their own friends when them come to university and I'm not sure that's such a good idea. People you have known for a long time are often the ones you feel closest to and can depend on the most.

7. To get back to the university itself, do you participate in the university politics by voting for candidates?

RESPONSES:

YES: That's good. So many students are apathetic in terms of turning out to vote. It's nice you take an overall interest in the university and show this by voting.

YES BUT DON'T REALLY EXAMINE CANDIDATES: Well, at least you vote. Some students are so apathetic they don't even bother to vote. It's understandable that you don't take a close look at the candidates, as this takes time and effort which one often can't afford.

NO: I can understand that. I know I didn't vote my first couple of years out here because I really didn't know anything about the candidates and didn't feel I really had much control over university policy.

8. Do you feel students should have a say in policies made which concern the university, especially when they involve the student?

RESPONSES:

YES: I agree with you. After all, we are not children, and especially if the policies affect us we should have a voice in the making of them.

IN SOME AND NOT IN OTHERS: That's a reasonable opinion. It takes maturity to realize that there are some areas where students should have a voice but other areas where they shouldn't.

NO: That's good to hear. So many students complain they don't have a voice in policy decisions. What they don't realize is that they are attending the university, not running it.

9. Would you ever consider running for an office, say in the A.M.S., during your university career?

RESPONSES:

YES/MAYBE: That's a reasonable attitude. Students tend to be apathetic or to cop out by saying they don't have the time. It seems to me they are just avoiding a responsibility which each individual should be willing to take.

NO: I can understand that. I never ran for office because I couldn't spare the time. Also I felt doubtful as to whether I really would have a say in what happened.

10. Perhaps we could change the subject a bit to focus more on the academic side of the university. What do you think about the size of your classes?

RESPONSES:

OKAY OR TOO BIG BUT REALIZE THIS BECAUSE COST OF TEACHERS: I'm glad

to hear you say that; students often complain about the size of classes.

These people are just not being realistic, they don't consider the cost

of hiring enough professors to have small classes.

BAD: Yes, I can see large size does make learning difficult. I know

myself that large classes often made me feel dehumanized, like a number.

I really feel some effort should be made to decrease the size of classes.

11. What about your professors? How do you find their lectures? Do you

feel they put the time and effort they should into making lectures

interesting and understandable?

RESPONSES:

YES: That's nice to hear. It suggests you are mature enough to get

what you need from a lecture. You don't demand to be entertained or

spoonfed. This is an important accommodation to make in coming from

high school to university.

SOME YES/SOME NO: Well, that's reasonable. Like in everything else

there is the good and the bad. At least you haven't overreacted to the

bad as some students do and decided all your lectures are boring. It

sounds like you evaluate in a fair mature fashion.

NO: I can empathize with you. I have often felt professors could do

a lot better teaching job if they only took a little more time and

cared a little more.

12. Students often complain they don't receive enough individual attention

from their professors. How do you feel about this?

RESPONSES:

SATISFIED: Your answer suggests you have the maturity to work on your

own, or if you need help you take the initiative to get it. This is
good, as to do well at university, you must develop these abilities.
DISSATISFIED BUT UNDERSTAND: It's good to hear you appreciate the
logistics of the situation. So many students fail to realize that
given the large size of classes individual attention is often impossible.
DISSATISFIED: I can understand your feelings. It is frustrating that
provision isn't made so students can get the individual attention they
need.

13.   What about teaching assistants? Do you feel they make themselves
available to you if you need help with your work?

RESPONSES:

YES: That's nice to hear. Students often complain they can't see their
T.A.s, but I feel they expect too much. They forget that T.A.s have
their own work to do and therefore have only so much time available.

YES AND NO: That's about what I have found, it just depends on the
T.A. I guess some T.A.s take their jobs more seriously than others.

NO: I can empathize with what you are saying. T.A.s often don't make
themselves available to their students; they seem to be too involved
in their own work.

14.   What about the evaluation system for students? Do you find the mark-
ing system fair, or do you feel it doesn't really evaluate your knowledge?

RESPONSES:

FAIR: Well, your answer suggests you are probably working well. I
have often found that students who complain about the system of evalu-
ation are those who don't work hard and yet they expect good marks.

NOT FAIR: That's the way I feel. Professors give a few objective
tests and some papers and they feel they have tapped your knowledge.

What if you aren't feeling well while doing the exam or paper? And no consideration is given as to the amount of work you have put in.

15. What about getting papers and exams back? Are you satisfied with the time period it takes before they are returned?

RESPONSES:

YES: Your response suggests you are being reasonable. So many students expect their work back within three days of handing it in, which isn't feasible if one considers other commitments markers may have. Again your answer suggests you have accommodated to the demands of a university versus a high school.

NO/NO AND YES: Yes, I feel the same way. I find it very frustrating when I don't get my work back for a long time. By the time I get it back I am thinking of other things and it's hard to refocus on the returned work. As a result I often don't learn from mistakes I made.

16. When you first entered university what kind of marks did you expect to get?

RESPONSES:

HIGH/AVERAGE: Well, that suggests you were willing to work when you came. Some students just don't seem to care about how they do at university, they don't put in the work and of course they don't get good grades.

NO EXPECTATIONS: Well, that's reasonable. Coming to a different learning environment, it's hard to predict how you are going to do.

17. In general, what have your marks been like this year?

RESPONSES:

HIGH/AVERAGE/MIXTURE: That's nice to hear. The first year of university can be tough, many students drop out or fail. Your grades suggest

you are working well now, which in turn suggests you will do well in later years.

LOW/MIXTURE OF AVERAGE LOW: Well, university can be tough, especially in your first year. It often takes a while to accommodate to the different system. The main thing is not to get discouraged.

18. Do you feel satisfied with your marks or do you feel you could do better and would like to improve?

RESPONSES:

SATISFIED: It is good you are satisfied. After all, as long as you feel comfortable with how you are doing, then that's all that matters. Also continual dissatisfaction could lead to anxiety which might interfere with your work.

DISSATISFIED: Well, most people feel dissatisfied with their achievements at different times in their life. The main thing is not to get anxious or depressed about how you are doing, as this will interfere with your work.

19. I know a number of students don't attend many lectures. Do you attend most of your lectures or do you skip them?

RESPONSES:

ATTEND: That's good to hear. It suggests you are really motivated to learn. I know one can often pass exams by just reading the texts but it seems to me a very lazy attitude indicative of someone not really interested in learning.

DON'T ATTEND: I guess you are like me. I found out early on that attending lectures is often a waste of time. Exams are usually based on what is in the texts, so why waste time listening to a professor.

20. Apart from lectures, how much time would you say you spend a week

working on your courses?

RESPONSES:

A LOT: Boy, you really work hard. That's good; it suggests you are motivated to do well and are willing to put the necessary work in. That's a positive sign in terms of really getting something out of university.

AVERAGE OR LOW: It sounds like you've learned to be sensible in terms of allotting your time. Many students are so nervous in their first year they tend to overstudy. A person like yourself who learns to work efficiently now will do well when the workload becomes more.

21. Of course, that's my opinion. Do you feel you put the appropriate amount of time into your studies?

RESPONSES:

YES: Good. As long as you are comfortable with what you are doing, everything's okay. But if you feel uncomfortable, anxiety usually arises which then interferes with your functioning.

NO: Well, it's only your first year. It takes a while to feel out what is the right amount of work for you to be doing. I know myself I didn't study nearly enough in my first year.

22. Do you feel that getting a degree from university will help you in gaining employment which you otherwise couldn't have gotten?

RESPONSES:

IF YES: I agree with you. Getting a job today is hard and if you want a job which offers good pay and possibilities of advancement you definitely need an education.

IF NO: Well, that's probably a realistic estimation of the utility of a bachelor's degree. It really doesn't help in getting a job the way things are today.

C. Negative Condition

1. Generally speaking, what were your expectations concerning university when you first came?

   RESPONSE: Well, they seem pretty vague, but I guess that's usual for first-year students.

2. Would you say these expectations have been fulfilled?

   RESPONSES:

   IF YES: Well, that's probably because you were fairly vague in the first place. The problem I see with this position is it doesn't lead to improvement in the calibre of education at the university which, as I see it, is fairly poor.

   YES AND NO/NO: I have heard that opinion so often from first-year students; it really makes me wonder what you expect. It seems to me that the reason students get disappointed is because they expect too much from the situation; they tend to be unrealistic.

3. IF DON'T MENTION CHANGING EXPECTATIONS: Do you feel after a year of experience with university your expectations have changed and if so, how?

   IF MENTION CHANGED EXPECTATIONS: You have mentioned you have changed your expectations since entering university. Could you elaborate a bit more on how they have changed?

   RESPONSES:

   NO CHANGE: Well, that is unusual. I guess you weren't very firm in what you expected because it is very rare that any new situation doesn't demand some change in a person's expectations.

   CHANGE GENERALLY POSITIVE: Well, that is an unusual response. I always wonder a bit about people who react like you, as to whether or not they aren't too easily satisfied.

CHANGE YES AND NO: That's rather an ambivalent response. I suppose it stems from being unsure as to what is really important to you in terms of your university career.

CHANGE NEGATIVE: Well, your response is similar to that of many students. What I don't understand is how you feel you have the right to complain. After all, you have never had to run the university and therefore aren't cognisant of all the problems inherent in a large institution.

4. Do you feel the university is academically stimulating? By this I mean do you feel it motivates students to learn?

RESPONSES:

YES: You certainly are in a minority with that opinion. I know I never found the university stimulating and neither did most of my friends. I usually found that the standard of learning required was so low that I had nothing to strive for.

NO/YES AND NO: I hear that opinion so often from students. I don't know, I think perhaps it comes from expecting to be spoonfed as you were in high school, rather than realizing that you can only get from university as much as you are willing to put in.

5. We have already talked a little about the social life at U.B.C. and I would like to follow the subject through a bit more. Do you feel that more opportunities should be opened for students to meet each other?

RESPONSES:

YES/YES AND NO: Well, I guess you see one of U.B.C.'s functions as promoting your social life. Personally I don't feel that way. I think the purpose of a university is to convey learning, not to aid socializing.

NO: Well, I suppose you are one of the lucky people who find it easy

to make new friends. I think what you are ignoring is the fact that many students are shy, or come from out of town and it is often difficult for them to make friends and as a result they feel socially isolated.

6. Have you found that since attending university you have lost touch with your high school friends? And if so, does this bother you?

RESPONSES:

YES/YES AND NO/AND BOTHERS ME/DOESN'T BOTHER ME: That has a familiar ring. People often seem to drop their high school friends who don't come to university. I really think this is a bad thing as you lose good friends and also possibly hurt these people by just dropping them for new friends.

NO: Well, that is unusual. Most people find it impossible to keep up old friendships when they move into a totally different environment. Also, usually the people who do this let something in the new environment slip, such as your work or making new friends.

7. To get back to the university itself, do you participate in the university politics by voting for candidates.

RESPONSES:

YES: Well, I don't see why. Don't you realize that the whole thing is a farce? Students don't have any say in the running of the university even if they are on any committees.

YES BUT DON'T REALLY EXAMINE THE CANDIDATES: That seems like an irresponsible attitude to me. If you don't examine what the candidates stand for, how can you vote? It takes so little time and effort to find out about what you are voting for I don't see why people aren't willing to put it in.

NO: I don't understand people like you. You have the opportunity to have a say in what happens at the university and yet you don't take it. It makes me think you are avoiding your responsibilities.

8. Do you feel students should have a say in policies made which concern the university, especially when they involve the student?

RESPONSES:

YES: To me that seems like an immature attitude. Students don't have enough knowledge of the university as a whole, to be able to make responsible decisions as to policies. I think these decisions should be left to people who really know.

IN SOME AND NOT IN OTHERS OR NO: I can't understand that kind of an attitude. Who could know better than the student attending the university what are good and bad policies. Personally I feel such an attitude is a cop-out to avoid responsibility.

9. Would you ever consider running for an office, say in the A.M.S., during your university career?

RESPONSES:

YES/MAYBE: I don't see why. You can't possibly do this and also put the appropriate amount of work into your studies. It seems to me like a total waste of time, time which could be spend working so you could achieve higher grades.

NO: Your attitude surprises me. If everyone thought like you, students wouldn't have any representation on university committees. Sometimes I think students just don't care about anything but their own life.

10. Perhaps we could change the subject a bit to focus more on the academic side of the university. What do you think about the size of your classes?

RESPONSES:

OKAY OR TOO BIG BUT REALIZE THIS BECAUSE OF COST OF TEACHERS: Boy, are

you unusual. Personally I found I learned very little in large classes

and I know most of my friends felt the same way. This really bugged me

because I wanted to maximize my learning and I knew it was possible to

have smaller classes so I could do this.

BAD: Well, they may be large, but size of a class shouldn't inhibit

learning if the student wants to learn. Anyway, don't you realize that

it is not feasible economically to have small classes for the large

number of first-year students enrolled.

11. What about your professors? How do you find their lectures? Do you

feel they put the time and effort they should into make lectures

interesting and understandable?

RESPONSES:

YES: Well, I have found very few students who feel this way. I have

always felt that lectures tend to lack information that I didn't already

know. On the whole, I think I have learned little from my professors.

SOME YES/SOME NO: Well, I'm glad to see you give credit to at least

some of your professors. Personally I don't think students realize how

hard it is to lecture to a sea of uninterested faces. Perhaps if you

as students seemed more interested your professors would try harder.

NO: Well, I guess you're like most students - full of complaints about

your instructor. What you people don't realize is that it is hard to

be interesting when you are looking at a sea of bored faces. Perhaps

if you took more of an interest in what is being taught your professors

would try harder.

12. Students often complain they don't receive enough individual attention

from their professors. How do you feel about this?

RESPONSES:

SATISFIED: Well you are lucky. I guess you must not have too many problems with your work or if you do, they don't worry you enough that you seek help. Of course you realize that there are students who need this help and aren't able to get it.

DISSATISFIED BUT UNDERSTAND: Well, you certainly are generous. I guess that's because you've never been in the position, as many students are, of really needing or wanting some extra information. Perhaps if you were in this position your attitude would change a bit.

DISSATISFIED: You know I just can't figure out what students expect. Each professor has at least three classes containing many students. I would think you could realize it just isn't humanly possible to meet each student's individual needs.

13. What about teaching assistants? Do you feel they make themselves available to you if you need help with your work?

RESPONSES:

YES/YES AND NO: That's an unusual answer. As with professors, most students find they don't get enough help with their work from T.A.s. It's nice that you're satisfied, but maybe you should think a little more about your classmates who are losing out because they aren't as lucky as you.

NO: You know, you should try being a T.A. sometime. Do you realize they carry a full academic load in addition to be a T.A.? I really think students are unfair when they complain about not being able to their T.A.s enough.

14. What about the evaluation system for students? Do you find the marking system fair, or do you feel it doesn't really evaluate your knowledge?

RESPONSES:

FAIR: Well, you certainly are in a minority. A number of students find the present system of evaluation very difficult. They experience exam anxiety or have problems writing papers. But I guess you don't consider these people and their troubles.

NOT FAIR: Well, it may not be the best way, but it's about the only method which is feasible. With so many students, there is no way a professor can get to know his students well enough to evaluate them on a personal basis. I really think people who complain are being unrealistic.

15. What about getting papers and exams back? Are you satisfied with the time period it takes before they are returned?

RESPONSES:

YES: Well, unless you are in an unusual class you must not get your work back for a least a week. And if it takes this long or longer, then you gain little in terms of learning from your mistakes. But them maybe you are like a number of students - you just look at your makr but don't use it or the comments in order to improve next time.

NO/NO AND YES: Of course you realize your dissatisfaction is based on unrealistic expecations. Professors and T.A.s can't just drop everything when exams and papers come in; they do have other commitments. But then most students tend to ignore the workloads of their instructors and think only of themselves.

16. When you first entered university what kind of marks id you expect to get?

RESPONSES:

HIGH: Well, that's pretty unrealistic. You must either have felt

university would be easy or you are very intelligent. Do you realize approximately 1/4 of first-year students drop out or fail and only a small percentage receive first-class marks?

AVERAGE OR LOW: Well, it doesn't sound like you expected much of yourself. This surprises me because if you don't expect a lot of yourself then you usually don't work as hard as you could. Buy maybe you aren't that interested in doing well.

NO EXPECATIONS: Well, that certainly doesn't suggest you thought much about university before you came. One could assume from this that you aren't particularly interested in your academic life.

17. In general, what have your marks been like this year?

RESPONSES:

HIGH: Well, that's understandable; it really isn't that hard to do well at university as the standards are quite low. I know I usually got first class marks and had to put little work in. I think they should raise the standards so really only good students get high marks.

AVERAGE/LOW/MIXTURE AVERAGE LOW: Well, I guess you're not working too hard. Maybe like a lot of students you are overinvolved in social activities and ignoring your studies. University requires a lot of work, you know.

18. Do you feel satisfied with your marks, or do you feel you could do better and would like to improve?

RESPONSES:

SATISFIED: You know, it's not that good an idea to ever feel satisfied with what you have achieved. When you feel this way the tendency is to sit back and relax and before you know it your work goes down. One should always strive to do better.

DISSATISFIED: Well, if you really feel this way the only way to remedy the situation is to work hard. Often this means giving up things you want to do, but if you really care about how you are doing, you would be willing to do this.

19. A know a number of students don't attend many lectures. Do you attend most of your lectures or do you skip them?

RESPONSES:

ATTEND: Well, you are an unusual person. Most students quickly realize that attending all lectures is inefficient in terms of utilization of time. Lecture time can often be used more fruitfully by working on your own. You don't really have to attend more than about 2/3 of your lectures.

DON'T ATTEND: I don't believe how often I hear this. Sometimes I wonder why we have a university when most students are so uncaring they don't even bother to attend their lectures. I don't see how you expect to learn if you don't go to lectures.

20. Apart from lectures how much time would you say you spend a week working on your courses?

RESPONSES:

A LOT: Wow, that's really a lot of time. It sounds like you tend to overstudy. That's a bad habit to get into because as you go on in university your workload will increase and you won't be able to handle it unless you learn to work more efficiently.

AVERAGE OR LOW: That doesn't sound like very much to me. I guess you're not very interested in learning at university. I find I have to work much harder than that to really get something out of my education.

21. Of course that's my opinion. Do you feel you put the appropriate amount of time into your studies?

RESPONSES:

YES: Well, it's your life. You are the one who will have to live with the results of your decision, not me. I just hope you feel this way two years from now.

NO: Well, that's good to hear. But of course you know that the best predictor of future behaviour is past behaviour, but you never can tell, maybe you will change.

22. Do you feel that getting a bachelor's degree from university will help you in gaining employment which you otherwhise couldn't have gotten?

RESPONSES:

YES: Well, it seems to me you have a lot to learn. Many people won't hire a BA because they are either overqualified or underqualified for most of the jobs available.

NO: Well then, why are you here? I suppose you just had four years to dwindle away, so you decided to waste them here.

APPENDIX   4

Summary of Analysis of Variance on the Semantic Differential

Scores During the Positive and Negative Interview Conditions

Friendly-Unfriendly

Source	SS	df	MS	F	p
Total	298.78	39			
Depressed/Nondepressed (D)	2.03	1	2.03	2.86	ns
Positive/Negative Condition (P)	270.40	1	270.40	382.49	<.01
DxP	0.90	1	0.90	1.27	ns
Between Subjects Error	25.45	36	0.71		

Pleasant-Unpleasant

Source	SS	df	MS	F	p
Total	273.99	39			
Depressed/Nondepressed (D)	1.81	1	1.81	3.56	ns
Positive/Negative Condition (P)	252.51	1	252.51	497.41	<.01
DxP	1.41	1	1.41	2.77	ns
Between Subjects Error	18.26	36	0.51		

APPENDIX 4 continued

Interested-Uninterested

Source	SS	df	MS	F	p
Total	96.29	39			
Depressed/Nondepressed (D)	0.23	1	0.23	0.21	ns
Positive/Negative Condition (P)	55.23	1	55.23	50.21	<.01
DxP	1.23	1	1.23	1.11	ns
Between Subjects Error	39.60	36	1.10		

Emotional-Unemotional

Source	SS	df	MS	F	p
Total	54.98	39			
Depressed/Nondepressed (D)	0.23	1	0.23	0.23	ns
Positive/Negative Condition (P)	16.90	1	16.90	17.21	<.01
DxP	2.50	1	2.50	0.03	ns
Between Subjects Error	35.35	36	0.98		

APPENDIX 4 continued

Kind-Cruel

Source	SS	df	MS	F	p
Total	138.93	39			
Depressed/Nondepressed (D)	1.81	1	1.81	1.92	ns
Positive/Negative Condition (P)	97.66	1	97.66	103.94	<.01
DxP	5.63	1	5.63	0.06	ns
Between Subjects Error	33.83	36	0.94		

Soft-Hard

Source	SS	df	MS	F	p
Total	72.51	39			
Depressed/Nondepressed (D)	3.91	1	3.91	5.19	ns
Positive/Negative Condition (P)	41.01	1	41.01	54.52	<.01
DxP	0.51	1	0.51	0.67	ns
Between Subjects Error	27.08	36	0.75		

APPENDIX 4 continued

Warm-Cold

Source	SS	df	MS	F	p
Total	207.60	39			
Depressed/Nondepressed (D)	4.23	1	4.23	5.15	ns
Positive/Negative Condition (P)	172.22	1	172.22	209.82	<.01
DxP	1.60	1	1.60	1.95	ns
Between Subjects Error	29.55	36	0.82		

Supportive-Unsupportive

Source	SS	df	MS	F	p
Total	164.18	39			
Depressed/Nondepressed (D)	0.76	1	0.76	0.74	ns
Positive/Negative Condition (P)	120.76	1	120.76	117.41	<.01
DxP	5.63	1	5.63	0.06	ns
Between Subjects Error	37.03	36	1.03		

APPENDIX 4 continued

Understanding-Critical

Source	SS	df	MS	F	p
Total	203.10	39			
Depressed/Nondepressed (D)	1.23	1	1.23	1.17	ns
Positive/Negative Condition (P)	164.02	1	164.02	156.42	<.01
DxP	0.10	1	0.10	0.10	ns
Between Subjects Error	37.75	36	1.05		

Positive-Negative

Source	SS	df	MS	F	p
Total	46.76	36			
Depressed/Nondepressed (D)	1.06	1	1.06	1.34	ns
Positive/Negative Condition (P)	10.51	1	10.57	11.33	<.01
DxP	1.81	1	1.81	1.95	ns
Between Subjects Error	33.38	36	0.93		

APPENDIX 4 continued

Sociable-Unsociable   :

Source	SS	df	MS	F	p
Total	157.18	39			
Depressed/Nondepressed (D)	15.63	1	5.63	0.06	ns
Positive/Negative Condition (P)	113.91	1	113.91	114.47	<.01
DxP	1.81	1	1.81	1.82	ns
Between Subjects Error	35.83	36	1.00		

Considerate-Inconsiderate

Source	SS	df	MS	F	p
Total	137.40	39			
Depressed/Nondepressed (D)	4.90	1	4.90	7.51	<.01
Positive/Negative Condition (P)	108.90	1	108.90	166.83	<.01
DxP	0.10	1	0.10	0.15	ns
Between Subjects Error	23.50	36	0.65		

APPENDIX 4 continued

Empathetic-Unempathetic

Source	SS	df	MS	F	p
Total	38.88	39			
Depressed/Nondepressed (D)	1.60	1	1.60	2.44	ns
Positive/Negative Condntion (P)	13.23	1	13.23	20.14	<.01
DxP	0.40	1	0.40	0.61	ns
Between Subjects Error	23.65	36	0.66		

APPENDIX 5

Verbal and Nonverbal Responses of Depressed and Nondepressed

Subjects Under Positive and Negative Interview

Conditions F-Test Results

Source	SS	df	MS	F	p
Length of Duration of Utterance					
Depressed/Nondepressed	74.26	1	74.26	0.31	ns
Positive/Negative	38094.00	1	38094.00	1.61	ns
Interaction	21.49	1	21.49	0.09	ns
Error	8519.04	36	236.64		
Lengths of Reaction Time Latency					
Depressed/Nondepressed	0.009	1	0.009	0.02	ns
Positive/Negative	0.43	1	0.43	1.12	ns
Interaction	0.005	1	0.005	0.01	ns
Error	13.73	36	0.38		
Length of Interruptions					
Depressed/Nondepressed	887.36	1	887.36	4.70	.05
Positive/Negative	846.40	1	846.40	4.49	.05
Interaction	75.63	1	75.63	0.40	ns
Error	6752.90	36	188.69		
Length of Eye Contact					
Depressed/Nondepressed	1409.00	1	1404.00	6.66	ns
Positive/Negative	60373.00	1	60373.00	28.19	.01
Interaction	8.65	1	8.65	0.00	ns
Error	77114.00	36	2142.10		
Frequency of Nodding					
Depressed/Nondepressed	1404.20	1	1404.20	3.04	ns
Positive/Negative	8549.80	1	8549.80	18.50	.01
Interaction	68.12	1	68.12	0.15	ns
Error	16639.00	36	462.20		
Frequency of Smiling					
Depressed/Nondepressed	960.40	1	960.40	1.13	ns
Positive/Negative	17578.00	1	17978.10	24.56	.01
Interaction	2005.10	1	2005.10	2.74	ns
Error	26357.00	36	732.13		

APPENDIX 5 continued

Source	SS	df	MS	F	p
Frequency of Hand Movements					
Depressed/Nondepressed	368.35	1	368.45	0.53	ns
Positive/Negative	715.72	1	715.72	1.03	ns
Interaction	22.80	1	22.80	0.03	ns
Error	25093.00	36	697.03		