

TESTING A DISCREPANCY DEFINITION
OF LONELINESS

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BY
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A thesis submitted to the Faculty of Graduate Studies of
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Abstract

This thesis was designed to test Peplau and Perlman's (1979) discrepancy definition of loneliness which holds that loneliness results from a discrepancy between desired and achieved levels of social interaction. Two approaches were used. One focused on the discrepancy between affiliation need (or desire for social contact) and various measures of achieved social interaction, while the second approach examined the notion of social comparison discrepancies. Two major hypotheses were postulated: that the discrepancy between affiliation need (or desire for social contact) and actual achievement of social interaction should be associated with greater loneliness; and that a negative discrepancy between subjects' evaluations of their social relationships compared to their peers' or to their past relationships should be associated with greater loneliness. Subjects (n=112) were recruited from Introductory Psychology classes at the University of Manitoba. A written projective test was used to assess affiliation need, while a questionnaire was used to investigate various aspects of social interaction. The Revised UCLA Loneliness scale was the instrument used to measure loneliness. Correlational and stepwise hierarchical multiple regression analyses were used to analyze the data, with UCLA Loneliness scores as the dependent variable.

Results indicated that among the four best predictors of loneliness, one discrepancy measure and three social comparison measures contributed significantly to the variance in UCLA Loneliness scores. Four other relevant variables also entered into the best set of variables for predicting loneliness. The data provide general support for the discrepancy definition of loneliness but suggest that the formulation should be modified to include the notion of social comparisons. Consideration was given to methodological and conceptual factors that may have influenced the strength of the results. Since other variables, besides discrepancy and social comparison scores contributed to the prediction of loneliness, the position of discrepancy factors and other variables in models for conceptualizing the causes of loneliness, was discussed. Also, in light of the overall set of results, three other issues were addressed. They were: the importance of qualitative vs. quantitative aspects of friendship as antecedents of loneliness; whether the great importance of the peer group as a comparison standard observed in this data set is age specific; and the effect of the desired level of social contact on the experience of loneliness. Practical implications of the data are that lonely individuals should

concentrate on improving the quality of their existing relationships, and set realistic standards based on realistic evaluations of the social contacts other people typically have. Identification of specific social deficits may help people design more effective therapeutic intervention programs for alleviating loneliness.

Chapter I

The present thesis is an extension of an earlier study which was conducted for a pre-Master's research requirement. The first project focused on loneliness as the major dependent variable and examined whether the determinants of loneliness change over adolescence. Results of this earlier study left some areas of interest incomplete. The purpose of the present study was to investigate a major area of concern which was not resolved by the earlier project.

The thesis was designed to further examine the "discrepancy model" of loneliness (Perlman & Peplau, 1981). According to this view, loneliness results from a discrepancy between one's desired and achieved levels of social contact. Thus, one would expect deficiencies in social contacts to be very closely associated with loneliness. However, in the earlier study, this discrepancy definition was not supported by the data. The results may have been due to methodological limitations of the earlier work. Therefore, a new study was undertaken to retest this central aspect of Perlman and Peplau's formulation.

The recent involvement of social scientists in the study of loneliness has brought increased interest as well as a proliferation of research in an ancient and universal social problem. The development of valid instruments for the measure-

ment of loneliness has contributed to increased empirical investigation (Russell, Peplau & Cutrona, 1978; Russell, Peplau & Ferguson, 1981). Recent large scale studies have reported on the high incidence of loneliness among young people (Rubinstein, Shaver & Peplau, 1979) and among adolescents (Brennan & Auslander, 1979; Ostrov & Offer, 1978). Several investigators, using a multidimensional approach, have reported that adolescent loneliness is associated with such personal and social factors as low self-esteem and unsatisfactory interpersonal relationships with peers, parents and teachers (Brennan & Auslander, 1979; Rosenberg, 1965; Wood & Hannell, Note 1).

Social developmental processes may contribute to the emergence of loneliness at adolescence (Brennan, 1982; Ellison, 1978). Adolescence is the period of separation from parents as primary attachment figures, and the period of increased need for establishing intimate relationships with members of the same or opposite sex (Sullivan, 1953; Weiss, 1973). These social developmental processes may cause disruptions in existing relationships, which may precipitate the onset of loneliness (Peplau & Perlman, 1979).

Recently, loneliness has been conceptualized in terms of a discrepancy between a person's desired and achieved levels of social contact (De Jong-Gierveld, 1978; Peplau & Perlman, 1979). According to Peplau and Perlman's working definition, "loneliness exists to the extent that a person's network of social

relationships is smaller or less satisfying than the person desires." (Peplau & Perlman, 1979, p. 101). Obviously, this discrepancy could be caused by developmental changes occurring during adolescence as well as by a host of other factors. The crucial point, however, is that loneliness should be very closely associated with measures of the desired vs. achieved levels of contact.

Earlier Study

In the pre-Master's research project, the antecedents of adolescent loneliness were examined. A question of particular interest was whether the determinants of loneliness change with age. A written questionnaire was administered to 410 students in Grade 8, Grade 11 and University. Results indicated that, although some determinants of loneliness such as self-esteem, social anxiety, level of identity achievement, and quality of relationship with family and friends were strong predictors of loneliness for all three age levels, other determinants changed with age. For the youngest age group, relationship with the mother was a strong predictor, whereas for older adolescents, frequency of contact with friends and satisfaction with dating relationships were more important predictors.

While the focus of this earlier study was on the determinants of loneliness, the data also provided evidence of changes in the quantity and quality of friendship relations during adolescence.

Discrepancy measure. The concept of loneliness as a social deficit (i.e., a discrepancy between desired and achieved levels of social interaction) was examined psychometrically in the first study. La Gaipa's Friendship Scale (1977) was used to measure the quality of friendship relations along five friendship dimensions (Positive Regard, Self-disclosure, Authenticity, Helping and Support, and Empathic Understanding). The Friendship Scale included two subscales which were used to rate both the Expected and Achieved levels of friendship relations. The discrepancy between these two measures (i.e., expected and achieved) was expected to be related to the level of loneliness, as measured by the University of California, Los Angeles (UCLA) Revised Loneliness Scale. However, correlational analysis indicated that the discrepancy measures computed for the five friendship dimensions were not significantly associated with loneliness.

Further analysis was conducted in an attempt to overcome a problem imposed by the scales, viz., the size of regular difference scores is limited as subjects approach either the lower or upper part of the scale. To avoid the problem of limited differences, regression analysis was computed to obtain residuals. Each of the five achieved friendship dimensions was used as a dependent variable regressed on its expected friendship dimension. These residuals were considered to be "discrepancies" and were then used to predict loneliness.

However, the residuals also failed to account for a significant amount of variance in the revised UCLA Loneliness Scores.

The results of the earlier study indicated that social comparisons were significantly associated with loneliness. Subjects' assessment of the number of good friends they had, compared to their peers, was a reasonably strong predictor of loneliness for the total sample, $r(341) = .42$, $p < .001$.

While this last correlation was more encouraging, overall the data from the three separate analyses failed to support the crucial importance of Perlman and Peplau's definition of loneliness as a discrepancy between desired and achieved levels of social interaction.

The unexpected results may have been due to the measures themselves. There was some evidence that social desirability and response bias may have influenced subjects' responses, since there was little or no range between the two responses (expected vs. achieved) on the 7-point scales used. The fact that the two subscales were placed immediately adjacent to each other may have further compounded the social desirability problem.

In addition, the wording used in the subscales may have influenced the results. Subjects were asked to indicate their "realistic expectation" of experiencing what was described in each statement. Conceptually, however, "expectation" and "desire" are not equivalent. Expectation does not necessarily reflect

desire. Someone may desire something, but may not realistically expect to attain it--whether for personal reasons or from past experience. This conceptual difference between desire and expectation may have contributed to the failure of these subscales to produce a significant discrepancy measure.

Present Study

The purpose of this study was to re-examine the social deficit notion of loneliness as a discrepancy between desired and achieved levels of social interaction. Since the earlier study was not successful in its discrepancy predictions, a further attempt was made to investigate the discrepancy definition, using different measures to assess discrepancy.

In undertaking this study, we also drew upon some recent discrepancy-related ideas formulated by Russell, Steffen and Salih (Note 2). Social comparisons play an important part in determining people's satisfaction with their own relationships (Cutrona, 1982). A recent cognitive model of loneliness (Russell et al., Note 2) proposes that how people evaluate their social relationships against an internal standard may be associated with feelings of dissatisfaction and loneliness. Thus, discrepancy may also be conceptualized as the difference between individuals' evaluations of their current social relationships and their comparison level for those relationships. According to Russell et al. (Note 2), the comparison level may be conceptualized as the quantity or quality of social contact the person desires.

The present study used two main approaches to investigate the discrepancy definition of loneliness. These approaches include: (a) the discrepancy between affiliation need and measures of social interaction and (b) the social comparison discrepancy.

Discrepancy between affiliation need and measures of social contact. Affiliation need or motivation develops during the process of socialization. The arousal of affiliation incentive occurs when a person's interest is directed towards others of similar position and behavior (Veroff & Veroff, 1980). In this study, a measure of affiliation need or motivation was used to assess subjects' needs or desires for social contact. The differences between the affiliation-need score and various measures of social interaction were then considered discrepancy scores.

A major hypothesis being tested was that the discrepancy between affiliation need and actual achievement of social interaction would be reflected in the level of reported loneliness. Thus, subjects who scored high on affiliation need or motivation and low on achievement of social contact were expected to be more lonely.

In thinking about the measurement of discrepancy, particular attention was paid to the selection of an affiliation measure. Several self-report questionnaire methods of measuring affiliative concern were initially examined. They were rejected, however, as being unsatisfactory for the purpose of this study.

The existing questionnaires were judged to be more relevant for the measurement of social skills or behavior, rather than subjective need for affiliation. Therefore, the possibility of using projective techniques as a way of tapping a dimension more akin to our intuitive notion of "need for affiliation" was explored.

Projective methods of assessing achievement, affiliation and power motivation have been used successfully in a variety of studies (see Atkinson, 1958). One especially promising approach was used in a nationwide survey conducted in the 1950s by Veroff, Atkinson, Feld and Gurin (1960) and in a recent replication survey by Veroff, Depner, Kulka and Douvan (1980). Veroff and his associates defined need or motive for affiliation as the importance attached to maintaining or regaining emotional connections to people (Veroff et al., 1980). These investigators used interviewers to record stories subjects gave in response to a set of six pictures. Separate sets of pictures were used for males and females. Same sex characters were used in the stimulus materials because similarity between pictured characters and subjects facilitates projection (Veroff et al., 1960; Veroff et al., 1980).

The use of this methodology proved highly successful. As we shall further document (methods section) the projective technique has good psychometric properties, including reliability and validity. For instance, in terms of validity,

research has shown that stories written by college students following an affiliation arousal experience (i.e., a sociometric procedure in a fraternity dining room) contained more affiliation imagery than stories written by students in a control condition (anagrams task in a classroom) (Atkinson, Heyns & Veroff, 1958). Given the success and greater apparent content validity in Veroff's technique, it was adopted for the present project.

Social comparison discrepancy. The second approach to the investigation of a discrepancy definition of loneliness focused on the concept of social comparison discrepancy. Social comparison processes may determine what people expect or desire in social relationships. Observation of the relationships of friends and peers may influence what students expect and how they evaluate their relationships. As well, past social relationships may determine expectations for current relationships.

This study examined the notion of social comparison discrepancy by asking subjects not only to evaluate their family, friendship and romantic relationships, but also to compare their own relationships to those of their friends. In addition, subjects were asked to compare past and present social relationships. Thus, it was predicted that subjects who were less satisfied with their current social relationships would be more lonely, and a negative discrepancy between the evaluation of their own social relationships and those of their friends would be associated with more loneliness.

Hypotheses of the Present Study

1. The discrepancy between affiliation need (or desire for social contact) and actual achievement of social interaction should be associated with greater loneliness.

2. A negative discrepancy between subjects' evaluations of their social relationships as compared to their peers', or to their past relationships, should be associated with greater loneliness.

Chapter II

Method

The study was designed to investigate both the discrepancy definition and social comparison notion of loneliness. A written questionnaire was employed to measure loneliness and to examine a number of variables considered to be predictors of loneliness. A written projective test was used to assess affiliation need. The instruments within the questionnaire, as well as the method of assessing affiliation need, will be described in this chapter.

Subjects

Subjects were recruited from Introductory Psychology classes at the University of Manitoba. A total of 112 students (56 male and 56 female) participated in the study.

Participation in this study was one of many options available to the students. Subjects who completed the written projective test and questionnaire were granted a credit towards fulfilment of course requirements for research participation. All of the subjects who registered and participated in the experiment provided usable data.

Materials

The Revised UCLA Loneliness Scale. The instrument used to measure loneliness was the University of California, Los Angeles (UCLA) Revised Loneliness Scale (Russell, Peplau & Cutrona, 1980). This scale has high internal consistency, with

a coefficient alpha of .94. It has high concurrent validity with other measures of loneliness, as well as good construct validity as demonstrated via correlations with emotional states presumed to be related to loneliness. Evidence of discriminant validity has also been reported (Russell et al., 1980).

The Revised UCLA Loneliness scale consists of 20 items, with half expressed in pro-trait terms and half in con-trait terms. Items include such statements as: "I feel in tune with people around me", and "There is no one I can turn to". Subjects indicate how often a statement describes them by marking one of four possible responses: "never", "rarely", "sometimes", or "often". A high score on the Revised UCLA Loneliness scale indicates greater loneliness. (see Appendix A, Part B, Items 12-31).

Affiliation need assessment. The need for affiliation, or affiliation motivation, was measured by use of a thematic apperception type test. Three stimulus pictures were used in this study. Although other investigators (Veroff et al., 1960; Veroff et al., 1980) have used separate stimulus cards for males and females, this study used a combined set of pictures for males and females. To provide balanced representation, the stimulus material included one picture from the male set of cards and one picture from the female set, plus a third picture that was common to both the male and female stimulus sets.

The pictures selected for this study were ones which elicited a moderately high percentage of stories containing affiliation imagery when used in two national surveys in 1957 and 1976 (Veroff et al., 1980). The reported percentages for each of the three pictures for 1957 and 1976 are presented in Table 1. These pictures (see Appendix B) are: (a) woman in foreground with man standing behind and to the left, (b) two women preparing food in a kitchen, (c) man at a drafting table.

Table 1
Percentage of Stories Containing Affiliation
Imagery by Picture, Sex, and Year

Picture	Male ^a		Female ^b	
	1957	1976	1957	1976
1	34%	28%	35%	30%
2	c	c	40%	43%
3	54%	53%	c	c

Note. Adapted from Veroff, Depner, Kulka and Douvan (1980).

^an's = 595 and 508 in 1957 and 1976, respectively.

^bn's = 774 and 700 in 1957 and 1976, respectively.

^cNo previous data available.

Subjects were provided with projective test booklets in which to write imaginative stories about the pictures. These projective test booklets contained a separate page (8½ x 14

in.) for each story. A set of questions corresponding to the stimulus picture was listed on each page, with a space after each question for the written answer. (see Appendix B.) The questions (adapted from Murray, and reported by Veroff et al., 1980) remind the subjects of the important elements required in the written story: Who are these people (Who is this person)? What are they (is he) doing? What has led up to this -- What went on before? What do they (does he) want? How do they (does he) feel? What will happen? How will it end?

Friendship scale. An adapted version of the Friendship Scale developed by La Gaipa (1977) was used to measure the perceived quality of relationships with good friends. Five friendship dimensions are examined (with two items representing each dimension): Positive Regard, Self-disclosure, Authenticity, Helping and Support, and Empathic Understanding. Each of the 10 items involves two rating scales which range from never (=1) to always (=7). One scale on La Gaipa's Friendship Scale asks subjects to indicate their expectation for experiencing the quality described. In this study, the wording was altered to ask subject's desire (or hope) for experiencing that quality in friendship relations (see Appendix A, Part A, Items 3-12). The second scale requires subjects to indicate how frequently they actually achieve that particular quality in their relationships (see Appendix A, Part C, Items 203-212). The desired and achieved scales were administered at different times (i.e.,

in separate parts of the written questionnaire). This procedure was used to allow more discrepancy.

Factor analysis of the data obtained in the earlier study indicated that all five friendship dimensions could be combined to form an overall desired (or achieved) scale score.

Results of the current data supported the same practice. Interitem correlations for the desired scale ranged from $r = .19$ to $r = .67$, with a median of $.41$. For the achieved scale, interitem correlations ranged from $r = .29$ to $r = .83$, with a median of $.51$. Since the interitem correlations were high, it was again decided to combine the ten items on each scale to form an overall scale score.

Two measures were computed: One scale score for desire for all five friendship dimensions (total desired) and one scale score for achievement of all five friendship dimensions (total achieved).

Examples of the Friendship Scale items include: "They show appreciation and praise me when I deserve it" (Positive Regard); "I feel free to express my most inner private feelings to them" (Self-disclosure); "We can express differences of opinion without its coming between us" (Authenticity); "They are concerned with my welfare and help to promote it" (Helping and Support); "They really try to see things through my eyes" (Empathic Understanding).

Other measures. Subjects were asked to list their good friends by initial, indicating sex of the friend, whether or not he or she is a relative, and the frequency of contact with the listed people. Subjects could list up to 20 friends, reporting contact on a scale ranging from frequent (=1) to infrequent (=5) contact.

A number of measures were developed from this information: The total number of friends; a total frequency of contact measure which was computed from the total frequency of contact with all listed persons, adjusting for the number of nonlisted persons; an average frequency of contact score which was computed for the friends listed ignoring the nonlisted.

Several questions were included in order to get information about such demographic variables as the subject's age, sex, year in University, number of years at this University, length of time subject had lived in Winnipeg, and living arrangement (whether at home, alone, or in dormitory).

The questionnaire also included several questions assessing the subject's relationship with his or her family, including a question asking about overall satisfaction with family relationships. Items, selected for factor loading (Schmidt, 1976) included: "I have a good relationship with most members of my immediate family" and "I have very little to say to members of my family". Subjects were asked to mark one of four possible responses (strongly agree, agree, disagree, strongly disagree).

Several questions examined personal and social factors such as dating status, including frequency and importance of, and satisfaction with, dating or romantic relationships. The issue of social comparison was measured by several questions asking subjects to assess the quantity (number of friends they have) as well as the quality of their friendship, romantic and family relations, as compared to their friends. In addition, subjects were asked to compare their past and present relationships. Social comparison questions included such items as "Compared to other people your age, do you think the quality of your relationship(s) with your same sex good friend(s) is..". Subjects were required to mark one of five responses, ranging from much better than average (=1) to much worse than average (=5).

Also included were several questions designed to assess satisfaction with friendship relations with same sex and opposite sex friends. An example of such items is: "Overall, how satisfied are you with the quality of your relations with your same sex good friends?" Subjects were asked to circle the number that best indicated their feeling (1=completely satisfied, 7=not at all satisfied). Similar questions were used to assess satisfaction with family relations and dating relationships.

Procedure

Subjects were run in several small groups over a period of 4 days, depending upon when they were available to participate.

The group method of assessing affiliation need has been used successfully in experimental situations with college students (Atkinson, Heyns & Veroff, 1958; Boyatzis, 1973; Shipley & Veroff, 1958). Both the need affiliation assessment and the written survey were administered by the experimenter. Each subject was given a large manila envelope containing the projective test booklet, the three-part questionnaire and an IBM answer sheet.

From the subjects' perspective, there were four parts to the study. The first part involved the thematic apperception test in which stimulus material was presented to the group of subjects by means of slide projection. After viewing each picture, subjects were required to write imaginative stories in response to specific questions.

Subjects were instructed to remove only the projective test booklet for the first part of the study. The rationale given for using a story-writing technique as part of a social relations survey was similar to that used by Veroff et al. (1980). The experimenter explained that social scientists were interested in what people think of some situations that occur in life and that the pictures represented these situations.

Subjects were asked to think of stories to go with each picture and to write these stories in the booklets provided. Subjects were told that they would view each picture for a few seconds and then they would be allotted 4 min. in which to write a story about each picture in accordance with a

set of questions listed on each page of the booklet. The experimenter emphasized that there were no right or wrong answers and instructed subjects to answer with anything that came to mind.

Each stimulus picture was presented separately (via slide projection) for 20 sec., and then the subjects were given 4 min. in which to write a story about that picture. Subjects were warned when they had 1 min. of writing time left.

The projective test was followed by the administration of the three-part written questionnaire. Subjects were told that Parts A and C of the questionnaire were to be answered directly on the questionnaire forms, while Part B was to be answered on the accompanying IBM answer sheet. A four digit identity code number had been marked on the first page of the projective test booklet, as well as on the first page of the questionnaire forms Parts A and C, and on the IBM answer sheets. This code number was the only form of identification used to ensure complete confidentiality of the data.

When subjects completed the questionnaire, they were each given a debriefing letter explaining the purpose of the study (see Appendix C). Subjects who were interested in results of the study were asked to complete self-addressed envelopes so that information could be sent to them at a later date.

Scoring and Coding of the Affiliation Need Measure

Coding procedures for affiliation motivation were based on criteria explicitly established by Atkinson (1958). Identical coding procedures were used successfully by Veroff et al. (1960) and Veroff et al. (1980).

Content analysis of stories. Content analysis of the written stories was performed in accordance with criteria provided in a scoring manual for the affiliation motive (Heyns, Veroff & Atkinson, 1958). Evidence of affiliation motivation may be found within seven scoring categories.

The first category, affiliation imagery, includes: (a) indication of concern in one or more of the characters in establishing, maintaining or restoring a positive affective relationship (i.e., friendship); (b) statements about how one person feels about another or their relationship, (e.g., some statement about liking or desire to be liked or accepted); (c) expressed concern about or reaction to separation or disruption of interpersonal relationship; (d) inferences drawn from affiliative activities such as parties or visits, as well as friendly, nurturant or helpful acts.

The second category for scoring involves stated need for affiliation (e.g., "he wants", "she hopes"). Affiliative need is scored for statements referring to maintaining or establishing interpersonal relationships, including statements of unrequited love.

A third category of scoring refers to instrumental activity (i.e., overt acts or thoughts directed towards establishing, maintaining or restoring interpersonal relationships). Evidence of concern for the feelings of the person advised or helped must be present to score for instrumental affiliative need.

Other scoring categories include anticipatory goal states and obstacles or blocks (personal or environmental) to goal-directed activity. Positive and negative affective states associated with attainment of affiliative relationships are also scored.

A final category refers to thema or central plot of the imaginative story. Thema is scored when affiliative imagery dominates the whole story.

As outlined by Heyns, Veroff and Atkinson (1958), the affiliation need score is obtained for each story by scoring +1 for each of seven categories. Doubtful and unrelated imagery are scored zero. The maximum possible score in a story is +7. The summed scores for the three stories is considered the affiliation need score.

Training a coder. An important methodological concern in the use of projective techniques is the need for achieving coding reliability. Smith and Feld (1958) have developed instructions and practice materials for learning content analysis for three motives, nAchievement, nAffiliation and

nPower. These practice materials were designed to teach a novice coder how to score imaginative stories for the three motives, and achieve scoring reliability acceptable for research purposes. Approximately 12 hours of practice are recommended so that a person can "learn to score without having to discuss scoring problems with an expert, i.e., a person who has had extensive previous experience with the scoring system" (Smith & Feld, 1958, p. 685). The procedure requires studying the appropriate training manual (i.e., for Affiliation need) and then scoring seven sets of practice stories.

Feld and Smith (1958) reviewed 14 studies using this method of content analysis and reported scoring reliabilities ranging from .66 to .96, with a median of .89. For 12 novice coders who had just learned to score stories according to the prescribed procedure, interjudge reliabilities ranged from .73 to .92, with a median of .87.

Veroff et al. (1980) used these procedures in both national surveys (1957 and 1976) for training coders and estimating inter rater reliabilities. Comparison of 1976 coders with 1957 coders on three random sets of 1957 stories found item-rater per cent agreement ranging between 80-90% for the presence of motive imagery and 90-95% for the absence of motive imagery. In 1976, percent agreement for check coding of imagery in total score reliabilities ranged between 80-90%, with a rank order reliability of .85 or above (Veroff et al., 1980).

In their national survey, Veroff et al. (1960) used a team of nine novice coders, three for each motive. Since the present study was considerably smaller ($n=112$) and only one motive was being examined, it was decided to use only one coder.

Training of the coder took place during a 2 week practice period just prior to the actual time of scoring. The coder studied the scoring manual for Affiliation motivation (Heyns, Veroff & Atkinson, 1958) and then followed the recommended training schedule (Smith & Feld, 1958) which involved scoring seven sets of practice stories in five different practice sessions, with approximately 2 days between sessions.

Assessing coder reliability. The coder's scoring reliability was evaluated according to methods recommended by Smith and Feld (1958) and used by Veroff et al. (1960) and Veroff et al. (1980). The coder's scores for each set of practice stories were checked with an expert's (listed with the correct answers). Two criteria were used for assessing coder reliability (see Appendix D). One index of agreement was the percent of agreement between the coder and the expert on the presence of affiliation-related imagery. A second index of agreement was obtained by calculating rank order correlations between the coder's ranking and the expert's ranking of the stories based on the total score in each story.

The percent agreement for presence of affiliation imagery and the rank order correlations between the coder's and expert's

ranking of the total score for stories in practice sets B to G are presented in Table 2. Sets E to G were based on novel

Table 2

Percent Agreement for Presence of Imagery
and Rank Order Correlations
Between Coder and Expert Scoring

	Practice Sets					
	B	C	D	E	F	G
Percent Agreement	1.00	0.80	0.93	0.42	0.81	0.82
Rank Order Correlations	0.98	0.80	0.93	0.97	0.81	0.86

material. The coder's unfamiliarity with these new stories may be reflected in the relatively low score for percent agreement in Set E, which corresponds to the coder's first exposure to the new material. Decrease in coding reliability when coding novel material has been reported by Feld and Smith (1958).

With the exception of percent agreement for set E, coder reliabilities based on the two criteria were generally good (see Table 2).

The practice sessions were deliberately conducted during the week prior to the actual scoring, in order to ensure that the coder maintained an optimal level of proficiency and familiarity with the coding procedures. Coding was done completely by the one coder. All the stories written in response to a stimulus picture were scored before the coder proceeded to the next set of stories. All protocols were scored during a 1 wk. period to further ensure coder consistency. The coder was unaware of the purpose of the study and did not see any part of the questionnaire, other than the projective test booklets.

As a further check on the coder's reliability, 1 wk. after all the subjects' protocols had been scored, a test-retest procedure was performed. A random selection of 12 protocols were re-scored by the coder, who was unaware of the previous scores. The correlation between test and retest scores for the 12 protocols was very strong ($r(10) = .98$, $p < .001$) indicating a high level of coding reliability and consistency.

Elimination of inadequate protocols. Veroff et al. (1960) established a basis for the elimination of protocols that were inadequate for assessing motivation. A subject's response to a particular question was considered inadequate if it provided no imaginative content that could be scored for motivational content. In this study, each of the three stories in a protocol

was based on answers to a set of four questions. Subjects were allowed two inadequate responses out of 12. A total of three inadequate responses was considered the criterion for eliminating a subject's protocol. Two of the 112 subjects were eliminated by this procedure.

Correction for correlation between length of story and affiliation need score. Correlations between motivation scores and length of protocols have been reported in some studies (see Veroff et al., 1960). A correction procedure was used by Veroff et al. (1960) and Veroff et al. (1980) in both national surveys to control for the relationship between motivation scores and verbal fluency.

Correlational analysis of the present data indicated a moderate relationship between the total affiliation need score and the total number of words written by a subject ($r(110) = .40, p < .001$).

Since a correction procedure has been advocated by other researchers using projective techniques, it was, therefore, decided to introduce a correction factor to adjust for variations in scores due to differences in subjects' written language skills. The technique used in this study parallels that of Veroff et al. (1960) and Veroff et al. (1980).

The correction factor was determined by the following method. Calculation of frequencies indicated that the total number of words per protocol ranged from 89 to 370. These

scores were divided into five groups depending on whether the total number of words was < 150 , 151-200, 201-250, 251-300,

> 301 words. An adjusted affiliation need score was computed by adding a correction factor to each score. The correction factor (2, 1, 0, -1, -2) was determined by the total number of words used by the subject (i.e., < 150 , 151-200, 201-250, 251-300, and > 300).

Analysis of variance computed for the adjusted affiliation score, and the five word-total subgroups, indicated that this correction method was effective. There was no significant difference in adjusted affiliation scores among the five groups ($F(4,105) = .95$, $p < .44$), indicating that the relationship between affiliation need score and length of protocol had been eliminated.

Calculation of Discrepancy Measures

Several procedures were used to analyze the data and compute discrepancy scores. First, scale scores were computed for the various measures and then seven discrepancy scores were calculated.

Two discrepancy scores were computed directly from the data. One direct discrepancy measure was derived from La Gaipa's Friendship scales, which examined friendship relations, in terms of both desired and achieved friendship qualities. The difference between the two rating scales (i.e., the total desired score minus the total achieved score) was then considered a discrepancy (Discrepancy/La Gaipa).

A second discrepancy score was formed by computing the difference between the number of friends that subjects listed (by initials), and the ideal number of friends subjects said they wanted. In some cases, special steps were taken because subjects did not specify an actual number of desired friends but only wrote "lots" or an "infinite number". The number 50 was designated to mean "lots", and 98 was used to represent an "infinite number" of friends. Thus, a high positive score means subjects had more friends than the ideal, while a negative score means that subjects had fewer friends than they desired.

Since other scores derived from the data were based on different scales, it was necessary to standardize the affiliation need score and other scores before computing discrepancy measures. Five additional discrepancy scores were computed using standardized scale scores. The adjusted and standardized affiliation need score was used as the indicator of desired level of social contact. Five separate discrepancy measures were computed, using five different indicators of achieved social contact.

The five standardized discrepancy measures were: (a) the discrepancy between total affiliation need and the total achieved score on La Gaipa's Friendship scale; (b) the discrepancy between total affiliation need and the total frequency of contact with friends; (c) the discrepancy between total affiliation need and the number of friends listed; (d) the

discrepancy between total affiliation need and the measure of social participation; (e) the discrepancy between total affiliation need and a measure of the quality of family relations.

Social comparison measures. To investigate the notion of social comparison discrepancy, a total of 11 social comparison measures were derived directly from the data. These measures assessed subjects' friendship, dating, and family relationships, compared to their peers, and compared to past relationships. Responses indicating that subjects' relationships were evaluated as worse than their friends' or worse than in the past, were considered negative discrepancies. The social comparison questions are included in Appendix A (see Part B, Items 1 to 4, 10, 11, 35 to 37, 43 and 44).

Chapter III

Results

Two main hypotheses were offered with regard to the discrepancy definition of loneliness. The first focused on the measurement of discrepancies between affiliation need (or desire for social contact) and actual social interactions. It was predicted that a discrepancy between desired and achieved social contact would be closely associated with greater levels of loneliness.

A second major hypothesis stated that a negative discrepancy between subjects' evaluations of their own social relationships, compared to their friends' relationships, or past relationships, would be associated with greater loneliness. The results will be presented with respect to these two hypotheses.

Statistical Techniques

Correlational analysis and multiple regression analysis were the main statistical techniques used to analyze the data.

The Revised UCLA Loneliness Score was the dependent variable throughout the analyses. Independent variables included the discrepancy and social comparison measures, as well as other measures derived from the questionnaire (as described in the methods section).

Listwise deletion of missing data. A procedure of listwise deletion of data was used in the regression analysis so that cases with missing values were automatically eliminated.

Thus, subjects who were missing data on any one of the variables, were deleted from subsequent regression analyses. While this procedure reduces the number of cases upon which coefficients are computed, it does ensure that correlations are computed from the same population, with all means, standard deviations, and correlations based on the same population. It is the commonly recommended procedure (Nie, Hull, Jenkins, Steinbrenner & Bent, 1975).

In this data set, using listwise deletion of missing data, all multiple regression analyses are based on 71 cases. However, for simple correlational analysis, pairwise deletion of missing data is appropriate and was used. Thus, simple correlational analyses are based on varying numbers of cases, ranging from 82 to 108, depending on the number of missing cases for each pair of variables. Significant correlations among variables are presented in Appendix E.

Revised UCLA Loneliness Scale

For the 112 students, the mean score on the UCLA scale was 37.79. However, multiple regression analyses are based on data from 71 subjects with a mean score on the UCLA scale of 36.83. This is about the mean (36.53) for UCLA students (Russell, Peplau & Cutrona, 1980).

Affiliation Need Assessment

Affiliation need scores, adjusted for correlation with length of stories, were available from 110 subjects; two cases

were eliminated because of inadequate protocols. Affiliation scores were generally low, with a mean of 4.16. Unadjusted affiliation scores ranged from 0 to 12 with a mean score of 4.06.

The percentage of stories containing affiliation imagery are shown in Table 3. These findings approximate the percentages

Table 3

Percentage of Stories Containing Affiliation
Imagery by Picture and Sex

Picture	Male ^a	Female ^b
1	37.5%	28.6%
2	53.6%	62.5%
3	50.0%	46.4%

^a_n = 56

^b_n = 56

reported by Veroff et al. (1980) for picture 1 for females, and picture 3 for males (see Table 1). However, males in this data set provided more affiliation imagery for picture 1 than males in the Veroff et al. studies (37.5% vs. 34% and 28%). For picture 2, females in this study provided a much higher percentage of stories containing affiliation imagery (62.5% as compared to 40% and 43% reported by Veroff et al. (1980)).

Correlational Analysis

Simple correlational analysis indicated that three discrepancy measures were significantly associated with loneliness. Correlations between the UCLA Loneliness score and all the Discrepancy and Social comparison measures are presented in Table 4.

Two of the discrepancy measures were moderately strong predictors of loneliness. The discrepancy between Total Desired and Total Achieved on La Gaipa's Friendship scales, was associated with greater loneliness, as measured by the UCLA Loneliness scale ($r(103) = .36, p < .001$). Subjects who achieved less than they desired, in terms of friendship qualities, were more lonely.

The discrepancy between Affiliation need and Total Achieved on the La Gaipa Friendship scale was also a moderate predictor of loneliness ($r(103) = .35, p < .001$). Subjects who had greater affiliation need and achieved less in terms of friendship qualities were more lonely.

A third discrepancy measure was a fairly good predictor of loneliness. Subjects who experienced a discrepancy between affiliation need and quality of family relations were more lonely ($r(104) = .26, p < .006$).

Several social comparison measures were significantly associated with loneliness. An evaluation of the quality of relationships with same sex good friends, as compared to

Table 4

Correlations Between the UCLA Loneliness Scores and
the Discrepancy and Social Comparison Scores

Discrepancy Variables	<u>r</u>	<u>df</u>	<u>p</u> <
Discrepancy between Total Desired and Total Achieved (on La Gaipa's Scale)	.36	103	.001
Discrepancy between Desired and Actual Number of Friends	.14	94	.17
Discrepancy between Affiliation Need & Total Achieved on Friendship Scale	.35	103	.001
Discrepancy between Affiliation Need & Total Frequency of Contact with Friends	.15	104	.12
Discrepancy between Affiliation Need & Number of Friends	.17	104	.08
Discrepancy between Affiliation Need & Social Participation	.14	104	.76
Discrepancy between Affiliation Need & Family Relations	.26	104	.006
Social Comparison Variables	<u>r</u>	<u>df</u>	<u>p</u> <
Change in Frequency of Contact with Friends	.34	106	.001
Number of same sex good friends compared to other people	.40	106	.001
Quality of relationships with same sex good friends compared to other people	.49	106	.001
Quality of relationship with same sex good friends compared to last year	.16	106	.09
Frequency of Participation in social activities compared to friends	.40	106	.001
Frequency of participation in social activities compared to last year	.12	106	.23
Frequency of dating compared to friends	.23	103	.02
Quality of dating relationships compared to friends	.25	101	.01
Quality of dating relationships compared to last year	.19	103	.06
Quality of family relationships compared to friends	.15	106	.12
Quality of family relationships compared to last year	.04	106	.66

other people's relationships, was a strong predictor of loneliness ($r(106) = .49, p < .001$). Subjects who perceived their relationships as being worse than their peers' were more lonely.

Some quantitative comparison measures were also good predictors of loneliness. Subjects who thought that they had fewer friends than their peers were more lonely ($r(106) = .40, p < .001$). Subjects who indicated less frequent participation in social activities, as compared to their peers, were also found to be more lonely ($r(106) = .40, p < .001$). As well, a decrease in the frequency of contact with friends, was a moderate predictor of loneliness ($r(106) = .34, p < .001$).

Frequency of dating, compared to their peers, was a fairly good predictor of loneliness ($r(103) = .23, p < .02$) as was an evaluation of the quality of dating relations, compared to peers ($r(101) = .25, p < .01$). Subjects who thought that they were dating less frequently, or perceived their dating relationships as being worse, than their friends' relationships were more lonely.

Several other variables were good predictors of loneliness. Selected variables which were significantly associated with loneliness are presented in Table 5. Among these variables, the Total Achieved score on La Gaipa's Friendship scale was most closely associated with loneliness ($r(105) = -.60, p < .001$). Subjects who reported that they

Table 5
Correlations Between the UCLA Loneliness Score
and Selected Variables

Variable	<u>r</u>	<u>df</u>	<u>p</u> <
Number of friends	-.31	106	.001
Proportion of same sex friends	.20	106	.03
Total frequency of contact with friends	.29	106	.002
Total desired on La Gaipa's Friendship scale	-.29	104	.002
Total achieved on La Gaipa's Friendship scale	-.60	105	.001
Social Participation	.28	106	.003
Family Relations	.45	106	.001
Satisfaction with friendship and family relationships	.59	106	.001
Satisfaction with dating relationships	.31	80	.005
Dating Status	-.21	106	.03
Satisfaction with life, in general	.56	104	.001
Time alone on week-end	.38	106	.001
Frequency of contact with strangers as opposed to friends	.26	106	.006

achieved more in terms of friendship qualities were less lonely. A measure that included satisfaction with same sex and opposite friendships and satisfaction with family relationships was also a strong predictor of loneliness ($r(106) = .59$, $p < .001$).

Other factors closely associated with loneliness included a measure of satisfaction with life in general ($r(104) = .56$, $p < .001$). Subjects who were less satisfied with their lives were more lonely. As well, poor family relationships were associated with greater loneliness ($r(106) = .45$, $p < .001$).

Multiple Regression Analysis

Multiple regression analysis was used to determine the best set of predictors among the discrepancy and social comparison measures, as well as among the other variables.

A stepwise hierarchical regression procedure was used. Hierarchical regression is appropriate in cases such as this because it permits first entering hypothesized predictors and then subsequently entering all other variables. The stepwise regression analysis is designed to select from a group of independent variables, the one variable, at each stage, which makes the largest contribution to R^2 (Cohen & Cohen, 1975).

The independent variables are entered into the regression equation only if they meet certain statistical criteria. (In this study, the statistical parameters which were used to

decide whether to enter variables into the final regression equation specified an N of 10 variables, and an F-value to enter of 4.0 with $p < .05$). The Statistical Package for the Social Sciences (Nie et al., 1975) (SPSS) computer program allows for an a priori specification of independent variables. Since the particular theoretical orientation of this study was concerned with the relationship between loneliness and various discrepancy and social comparison measures, that set of variables was entered first in the regression analysis. The remaining individual variables were entered as a second group. The sequence of variables within each group was determined by the forward stepwise regression procedure.

The results of the stepwise hierarchical multiple regression analysis indicate that among the seven discrepancy variables and 11 social comparison variables examined, a set of four variables was significantly associated with loneliness. These variables, the proportion of variance contributed uniquely by each variable, and the respective values of Beta, and F to enter, are presented in Table 6.

In the set of four significant social comparison and discrepancy variables, the best predictor of loneliness was the subjects' evaluation of the quality of their same-sex friendship relations, compared to other people. This social comparison variable alone accounted for 23.42% of the variance in the dependent variable (UCLA Loneliness scale scores),

Table 6

The Eight Variables in a Stepwise Hierarchical Multiple
Regression Analysis that were Significant
Predictors of Loneliness

Description	Predicted Variables ^a		
	Proportion of Variance Ac- counted for	Beta	<u>F</u>
Quality of relationship with same-sex good friend compared to other people	23.42%	.484	21.10**
Discrepancy between Total Desired and Total Achieved on La Gaipa's scale	10.76%	.333	11.12**
Decrease in frequency of contact with friends	5.38%	.235	5.96*
Number of same-sex friends, compared to other people	4.19%	.209	4.91*
	Other Variables ^b		
Total Desired on La Gaipa's Friendship scale	11.47%	-.485	16.65**
Time alone on average week-end	7.25%	.283	12.36**
Satisfaction with current dating relationship	2.46%	.175	4.42*
Number of friends	2.15%	-.166	4.04*

Note: ^aFor the four predicted variables, multiple correlation coefficient = .661. Cumulative proportion of variance accounted for = 43.75%. F-value for analysis of variance with 4 and 66 degrees of freedom = 12.83, $p < .01$.

^bFor the 8 variables, multiple correlation coefficient = .819. Cumulative proportion of variance accounted for = 67.07%. F-value for analysis of variance with 8 and 62 degrees of freedom = 15.78, $p < .01$.

* $p < .05$

** $p < .01$

$F(1,69) = 21.10$, $p < .01$. The initial multiple correlation coefficient, R , was .484.

The discrepancy between Total Desired and Total Achieved on La Gaipa's Friendship scales was the next best predictor of loneliness with $R = .585$, for the first two variables, and accounted for 34.18% of the variance in UCLA Loneliness scores.

Two other social comparison variables were found to add significantly to this first set of predictors. A decrease in the frequency of contact with friends was associated with greater loneliness. For the first three variables, the multiple correlation coefficient was $R = .629$, with a total of 39.56% of the variance in UCLA scores explained.

The next best social comparison variable involved subjects' perception of the number of friends they had, compared to their peers. Subjects who thought that the number of friends they had was much smaller than average were also more lonely. These four discrepancy/social comparison variables accounted for a total of 43.75% of the variance in UCLA Loneliness scores; with $R = .661$, indicating a strong relationship with loneliness.

The second phase of the stepwise hierarchical multiple regression analysis examined all remaining variables (excluding discrepancy and social comparison variables) to

determine the best set of predictors. A set of four variables was found to contribute significantly to the proportion of variance accounted for in UCLA Loneliness scores. These four variables, the increase in proportion of variance accounted for by each variable, as well as the values of F -to-enter and Beta, are shown in Table 6.

The best predictor in the second group of variables was the variable measuring Total Desired in terms of Friendship qualities (La Gaipa's scale). The inverse relationship indicated that subjects who desired less, were more lonely. This variable (Total Desired) accounted for 11.47% of the variance in UCLA Loneliness scores. The multiple correlation coefficient, R , was .743. Thus, 55.22% of the total variance in loneliness scores was accounted for by this set of five variables.

The next best predictor in the second set of significant variables was the amount of time subjects spent alone on an average weekend. People who reported spending almost all their waking time alone were more lonely. With this variable included in the regression equation, $R = .790$, and 62.46% of the variance in loneliness scores was now explained by the relationship with the six variables.

Satisfaction with dating relationships was the third best predictor in this set of variables. Subjects who were less satisfied with their current romantic relationship(s)

were also more lonely. The addition of this variable produced an R of .806, with 64.92% of the variance in UCLA loneliness scores now explained.

The final variable which contributed significantly to the variance in loneliness scores was the number of friends subjects reported having. Subjects who had fewer friends were more lonely. With the eight best predictors included, the strength of the relationship increased to $R = .819$. A total of 67.07% of the variance in UCLA Loneliness scores was predicted by the eight variables combined.

The increase in proportion of variance accounted for by the second set of variables was 23.32%.

Summary of Results

Some support was found for the first major hypothesis that a discrepancy between desired and achieved levels of social contact would be associated with greater loneliness. Of the seven discrepancy measures, three were significantly correlated with loneliness. These three variables included the discrepancy between Total Desired and Total Achieved on the Friendship scales, the discrepancy between Affiliation need and Total Achieved, and the discrepancy between Affiliation need and family relations. However, contrary to what one would expect from Peplau and Perlman's discrepancy definition, none of these correlations was especially high,

and, in the stepwise multiple regression analysis, only one of these discrepancy variables (i.e., the discrepancy on La Gaipa's scale between desired and achieved relationships) was a significant predictor. Thus, only qualified support was found for the importance of discrepancy variables in predicting loneliness.

More support was found for the second hypothesis involving social comparisons. It was predicted that a negative discrepancy between subjects' evaluation of their own social relationships compared to their past or peer relationships or both, would be closely associated with loneliness.

Of the 11 social comparison variables examined, six were found to be significantly correlated with loneliness. These were quality of one's own relationships with good friends compared to the quality achieved by one's peers; number of same sex good friends, vis-à-vis peers; frequency of participation in social activities (vis-à-vis friends); change in frequency of contact with friends; and frequency of dating and quality of dating relationships compared to friends.

Results of the stepwise multiple regression analysis further demonstrated the importance of three of the comparison measures. The variables included quality of relationships with same sex good friends, compared to peers; decrease in frequency of contact with friends; and number of same sex friends, compared to peers.

Chapter 4

Discussion

The data provide general support for Peplau and Perlman's (1979) discrepancy definition of loneliness, but suggest that refinements in their formulation are required. In this chapter, the data will be reviewed with respect to the findings which support the discrepancy viewpoint, and consideration will be given to methodological and conceptual factors that may have influenced the strength of the results. In addition, the contribution of the discrepancy model in predicting loneliness, as well as miscellaneous observations on the data, will be discussed. Finally, practical implications of the data for helping people alleviate loneliness will be articulated.

The Discrepancy Viewpoint

Only limited support was found in the correlational and multiple regression analyses for the hypothesis that a discrepancy between desired and achieved levels of social contact should be closely associated with loneliness. While discrepancy measures did correlate with loneliness, none of these correlations was especially high. In the multiple regression analysis, only one of the discrepancy measures was found to be a significant predictor of loneliness. It was the discrepancy between

what subjects desired and what they actually achieved in terms of quality of friendships.

However, the concept of a social comparison discrepancy was given more substantial support by the data, thus upholding the second major hypothesis, that a negative discrepancy between subjects' evaluation of their social relationships vis-à-vis their peers, or their past relationships, should be associated with greater loneliness. Three social comparison discrepancies were important indicators of loneliness. Among these, the best predictor of loneliness was the subjects' perception of a deficiency in the quality of their friendship relations, compared to their peers.

The results of this study more clearly support the social comparison notion of discrepancy. In the light of these results, it appears necessary to modify the discrepancy viewpoint to include social comparisons. In thinking about possible explanations for the findings, consideration should be given to both methodological and conceptual issues.

Methodological Issues

Improved procedures. The significant correlation between the La Gaipa discrepancy measure and the UCLA Loneliness score in both the simple correlational and

multiple regression analyses represents a considerable improvement over the earlier study (i.e., Goldenberg, Note 3), which did not find a significant correlation between the discrepancy measure and loneliness.

The relative success of the one discrepancy measure (based on the difference between total desired and total achieved on La Gaipa's Friendship scales) may have been due to improved methodology.

As was noted in the introduction to the present thesis, the discrepancy measure in the earlier study, was based on La Gaipa's Friendship scales, assessing expected and achieved friendship qualities. The two scales were placed immediately adjacent to each other following each item. Under these circumstances, response bias and social desirability may have produced a weak discrepancy. Therefore, certain methodological changes were implemented in the present study. The two scales were placed in separate sections of the questionnaire. As well, the wording of the first scale was changed from "expectation" to "desire" for particular friendship qualities. The word desire was considered to better reflect what people need or hope for in friendship relations. These methodological changes may have contributed to the improved results in this study (i.e., the

significant correlation between loneliness and the discrepancy measure based on the Friendship scales.

Methodological problems. Other methodological factors may have constrained the magnitude of the discrepancy correlations which were obtained in this study. For instance, the affiliation need scores were relatively low. Thus, a skewed distribution and a truncated range of scores may have been responsible for the conservative estimates produced by the various discrepancy measures in which the affiliation need score was used.

Conceptual Issues

The discrepancy definition refers to loneliness as resulting from a discrepancy between desired and achieved levels of social interaction. Perhaps an important distinction must be made between direct (or objectively measured discrepancies) and perceived discrepancies. It may be that loneliness results primarily from a perceived rather than a direct discrepancy. It would seem that an important mediator in the cognitive process leading to loneliness is the perception of a discrepancy or deficiency in one's social relationships.

In this study, subjects were required to evaluate their relationships as compared to their peers' or past relationships and such techniques perhaps highlighted possible social deficiencies. Social comparison scores

were obtained from a single item forcing the subjects to reflect on the relative status of their social contacts. Thus, the social comparison measures had the advantage of directing subjects attention to any existing deficiencies.

The other discrepancy variables used both subjective (indirect measures) and objective (direct measures) of affiliation need and actual social contact in order to operationalize the discrepancy definition of loneliness. In other words, to get discrepancy measures, two separate scales were always involved, and the subjects never had to consciously compare their answers to each of the scales. These measures may have tapped actual social deficiencies; the discrepancies, however, may not have been perceived as such by the subjects. This important methodological and conceptual difference may explain why the discrepancy measures were not significantly associated with loneliness. The critical factor involved in the discrepancy notion of loneliness may be the necessity for people to perceive a discrepancy, and interpret it as such, in order to feel lonely.

Although "perceived" discrepancy between desired and achieved levels of social contact is implicit in the Peplau and Perlman (1979) formulation, the subjective and objective measures used in this study may not have

adequately detected that particular aspect of the discrepancy definition. Future research might measure social discrepancies via single items akin to the social comparison measures used in the present study.

The Importance of Discrepancies as Predictors

At this point, it would be appropriate to evaluate the importance of discrepancies in predicting loneliness and to review the position of the discrepancy model.

While the discrepancy and social comparison variables did contribute significantly to the predictability of UCLA Loneliness scores, they were not completely satisfactory. The four best discrepancy/social comparison variables explained only 43.75% of the total variance, with other variables adding another 23.32%. These findings indicate that the discrepancy/social comparison factors alone do not sufficiently explain loneliness and that other factors must be weighed as well.

One view of loneliness is that it results solely from a discrepancy between desired and achieved social contact. According to this view, all other variables would be considered antecedents to the two contact parameters, and would have no direct, independent influence on loneliness. The data from the present study are not consistent with this view.

The data suggest that a whole constellation of factors may contribute to the loneliness experience. While the discrepancy model may provide a partial explanation of some of the factors leading to loneliness, other elements must be present in combination to further increase the occurrence of loneliness.

Reviewing the results of the data allows qualified acceptance of Peplau and Perlman's (1979) definition. Given the importance of social comparison processes in revealing social deficiencies or discrepancies, which are in turn linked to loneliness, it is apparent that the discrepancy definition should now be modified to include social comparisons. A discrepancy between desired and achieved levels of social interaction may indeed be the crucial factor leading to loneliness, but other factors also appear to play a causative role. The perception of the discrepancy may be a critical cognitive component of the loneliness experience.

Miscellaneous Observations on the Data

Several aspects of the data require further comment. These include the relative importance of both qualitative and quantitative aspects of friendship, the importance of the peer group as a standard of social comparison, and the effect of the desired level of relationships on the experience of loneliness.

Qualitative and quantitative aspects of friendship.

Qualitative aspects of friendship, especially, satisfaction with friendship relations, have been closely associated with loneliness (e.g., Cutrona, 1982). In the present study, both the direct discrepancy between desired and achieved friendship qualities, and the social comparison discrepancy involving an assessment of the comparative quality of friendship relations, provide further evidence that dissatisfaction with the quality of friendship relations is an important predictor of loneliness.

The peer group served as a comparison level or standard (see Pettigrew, 1967) against which subjects evaluated their own social relationships with family, same sex friends and romantic partners. Satisfaction with friendship relations was more important than satisfaction with family or dating relations past or present, in predicting loneliness. These findings are consistent with those reported by Cutrona (1982) and Russell et al. (Note 2).

Quantitative measures of friendship relations were also significantly associated with increased loneliness. Subjects who reported a decrease in the frequency of contact with friends, or who thought that they had

fewer friends than their peers, were more lonely. Thus, subjects who perceived qualitative or quantitative deficiencies in their friendship relations, were more likely to be lonely. No conclusive support was found for Cutrona's (1982) contention that qualitative aspects of friendship are more closely associated with loneliness. In this study, both qualitative and quantitative aspects of friendship relations were significantly linked to loneliness.

The importance of the peer group. The importance of friendship relations vs. romantic or family relations, as well as the importance of the peer group as a standard of comparison, may be age specific. Developmental changes may determine the relative importance of certain relationships. For adolescents, including younger college students, the peer group and friendship relations are most important. However, at other stages of life, romantic and kin relationships may assume greater significance. Consistent with this view, among older college students, satisfaction with dating relationships was an especially important predictor of loneliness (Russell et al., Note 2), but among junior high students (Goldenberg, Note 3) family relations were a stronger predictor than either peer or dating involvements.

Desired level of relationships. According to the stepwise hierarchical multiple regression analysis, the best predictor in the second set of significant variables was the measure of Total Desired on La Gaipa's Friendship scale. Although this variable showed only a moderate correlation with loneliness, it assumed greater significance during the multiple regression procedure. This may be partly explained by the particular relationship between the Total Desired and Total Achieved measures which were used to compute the discrepancy measure. Once the first two variables were included in the regression analysis (i.e., discrepancy and Total Desired) the third (Total Achieved) no longer contributed to the predictive equation. Although the Total Achieved measure was more closely related to loneliness, it lost significance due to the restrictions of the regression procedure.

However, the importance of the Total Desired measure is not merely an artifact of the analysis. It is an interesting finding in itself and is consistent with other research (to be reviewed in subsequent paragraphs). The inverse relationship between Total Desired and the UCLA Loneliness score indicates that people who desired less were more lonely. This finding could be explained in several ways.

There is some evidence that lonely people lower their expectations or desires for social relations. Loneliness itself may foster low expectations. Cutrona (1982) found that persistently lonely students had changed or lowered their goals for desired social relationships. People who had low expectations for improving their social relations remained lonely. Thus a self-fulfilling prophecy seems to be established, with particular attitudes and low expectations serving to produce or maintain loneliness, or both.

Cutrona (1982) measured loneliness both at the beginning of the students' first year at college and seven months later in order to assess changes in the causes of loneliness. In the current study, subjects were assessed only once, approximately 6 months after beginning their first year at university. Thus, the lonely students in this study may be comparable to the chronically lonely described by Cutrona. It is conceivable that these lonely students did indeed lower their expectations or desires for social contact. The inverse relationship between Total Desired and the loneliness score may reflect such a phenomenon.

Implications

Based on the evidence in this study, there are several implications for preventing and alleviating loneliness. These implications are relevant not only for the lonely person but also for therapists, counsellors and others in helping professions.

Firstly, if, as these results suggest, the quality of friendship relations is closely associated with loneliness, then an obvious strategy would be to improve the quality of existing relationships. For some individuals, this process might require the development of better social skills, including communication skills, in order to improve current friendships and establish new ones. Improving social skills would provide people with some necessary behavioral tools which could enhance self-esteem and self-confidence and promote more satisfying social interactions.

Another implication arises from the importance of social comparison processes in relation to loneliness. The findings suggest the need for realistic assessments of other people's social networks and evaluation of one's own relative social success. Social comparisons may lead to exaggerated estimations of other people's social success, with the result that unrealistically high

comparison levels may be established.

Lonely people should be encouraged not only to select appropriate others as social comparison referents, but also to develop some insight into how accurate their evaluations of other people's lives really are. For instance, lonely people might be encouraged to select less sociable others as referents, or correct exaggerated estimates of other people's social success, in order to minimize negative discrepancies.

An important distinction must be made between negative social comparisons and lowering one's desire for social contact. The results of this study, as well as other research (see Cutrona, 1982), suggest that lowered social desires are associated with greater loneliness. Thus, assuming desires are a cause of loneliness, not a consequence, it appears that lonely people should be advised against lowering their desires for social contact.

By implication, this observation suggests that strategies should be directed at minimizing social deficits by increasing the achieved aspect of social interaction. Efforts should be made to increase both the quality and the quantity of social interactions in order to reduce the perception of a discrepancy, and

thereby alleviate loneliness. In other words, it appears that one side of the discrepancy equation (achieved social contact) is a better target for clinical intervention than the other (desired social contact).

Treatment strategies should be directed at identifying the particular causes of loneliness and focusing therapeutic efforts on specific problems. For example, for some people, loneliness may be situational, requiring temporary social support, while for other lonely people, with more enduring problems, treatment may involve improving social skills, or forming more realistic self-other evaluations. Intervention programs directed at such specific problems would achieve the greatest therapeutic effect.

Conclusions

This thesis has provided general support for the discrepancy viewpoint of loneliness, with particular support for the notion of social comparisons. The data also point to the importance of qualitative and quantitative aspects of friendship as antecedents of loneliness, the importance of peers as a standard of comparison, and the effect of desired level of contact on the experience of loneliness.

These findings, supporting the discrepancy viewpoint, have important implications for the prevention and treatment of loneliness. They indicate that neither the psychotherapist nor the lonely person should focus exclusively on one's achieved levels of social contact. Instead, attention should also be focused on desired levels of contact, desired-achieved discrepancies, and social comparisons. For instance, distinguishing between unrealistically high standards of comparison and chronically low desires for social contact, could provide more specific guidelines for the design of treatment programs for lonely individuals, rather than simple admonishments such as "Find more friends".

Self-help strategies and therapy could be directed at promoting insight, developing social skills and self-confidence, and setting expectations consistent with realistic standards and enlightened self-other comparisons.

Loneliness is a universal experience which has been associated with various social problems. The information provided by this study may contribute to increased understanding of the dynamics of loneliness. It is the present author's hope that this information can be used not only to alleviate the distress experienced by lonely individuals, but also to reduce the costs to society

incurred by such loneliness-related problems as suicide, alcoholism and the overuse of medical facilities.

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Appendix A

Questionnaire No. _____

University of Manitoba Social Relations Survey

The primary purpose of this survey is to learn more about people's social relationships. The survey is being conducted by members of the Psychology Department at the University of Manitoba. It is part of a larger programme of on-going research. The information we have gathered over the years has been mostly used for scientific purposes. However, it has also been used as the basis for news/TV reports, social planning, and helping individuals to lead more satisfying social lives.

The questionnaire contains statements which can be used to describe people's feelings, experiences and behaviour. Naturally, the success of the project depends on your giving frank, honest answers.

Instructions

The questionnaire is divided into three parts. For Part A we would like you to record your answers directly on the question sheets.

For Part B of the questionnaire, all answers should be recorded on the IBM answer sheet. Record the answer to each question on the IBM sheet, as you would do normally. For instance, you would record your answer to question 36, by making a pencil mark in the appropriate response category (1,2,3,4,5) on the IBM answer sheet, in the spaces reserved for question 36. If your answer was alternative 1, you would mark space 1.

Part C should be answered directly on the questionnaire form, again.

There is a four digit code number marked in the upper right hand corner of the first questionnaire sheet for Part A, and Part C as well as on the IBM answer sheet. Your name will not be required; the code number will be the only identification used.

Initials	Sex		Relative		Frequency of Contact				
	Male	Female	Yes	No	Daily	Almost Daily	2-3 Times per week	Weekly	Less Than Wkly
_____	1	2	1	2	1	2	3	4	5
_____	1	2	1	2	1	2	3	4	5
_____	1	2	1	2	1	2	3	4	5
_____	1	2	1	2	1	2	3	4	5
_____	1	2	1	2	1	2	3	4	5
_____	1	2	1	2	1	2	3	4	5
_____	1	2	1	2	1	2	3	4	5
_____	1	2	1	2	1	2	3	4	5
_____	1	2	1	2	1	2	3	4	5
_____	1	2	1	2	1	2	3	4	5

2. You have listed all the "good friends" you have in Greater Winnipeg. Ideally how many good friends would you like to have?

The next set of questions is about your desire or hope for certain friendship qualities. Read each statement and answer it in terms of your relationships with your good friends. Use the rating scale after each statement to indicate:

your desire (or hope) of experiencing what is described in the statement.

Remember to answer in terms of your relationships with your "good friends". Circle the number that best represents your answer.

3. "They show appreciation and praise me when I deserve it."

Desire for Experiencing This Never 1 2 3 4 5 6 7 Always

4. "We can express differences of opinion without it coming between us."

Desire for Experiencing This Never 1 2 3 4 5 6 7 Always

5. "They are concerned with my welfare and help promote it."
 Desire for Experiencing This Never 1 2 3 4 5 6 7 Always
6. "I feel free to express my most inner private feelings to them."
 Desire for Experiencing This Never 1 2 3 4 5 6 7 Always
7. "They really try to see things through my eyes."
 Desire for Experiencing This Never 1 2 3 4 5 6 7 Always
8. "They enhance my feelings of self-worth."
 Desire for Experiencing This Never 1 2 3 4 5 6 7 Always
9. "I can drop all my defences and be myself with them."
 Desire for Experiencing This Never 1 2 3 4 5 6 7 Always
10. "They give readily; I don't have to ask for it."
 Desire for Experiencing This Never 1 2 3 4 5 6 7 Always
11. "I could talk to them about my personal problems."
 Desire for Experiencing This Never 1 2 3 4 5 6 7 Always
12. "They know how I feel even when I cannot put it into words."
 Desire for Experiencing This Never 1 2 3 4 5 6 7 Always
13. Overall, how satisfied are you with the quality of your relations with your same sex good friends? (Circle the number that best indicates your feeling.)
 Completely Satisfied 1 2 3 4 5 6 7 Not at all Satisfied
14. Overall, how satisfied are you with your current family relationships?
 Completely Satisfied 1 2 3 4 5 6 7 Not at all Satisfied

15. Overall, how satisfied are you with the quality of your relations with your opposite sex (platonic) good friends?

Completely Satisfied 1 2 3 4 5 6 7 Not at all Satisfied

16. If you are "dating", or going out with someone, how satisfied are you with your current romantic relationship(s)?

Completely Satisfied 1 2 3 4 5 6 7 Not at all Satisfied

17. In general, how satisfied are you with the way you are spending your life?

Completely Satisfied 1 2 3 4 5 6 7 Not at all Satisfied

18. How old are you? _____ years old.

University of Manitoba Social Relations Survey

Part B

Friendship and Social Activities

For Part B of the questionnaire, please record all your answers on the IBM answer sheet. Part B begins at question #1 again. Please make sure that your code number is recorded in the upper right hand corner of your IBM answer sheet. Do not write on this part of the questionnaire, as it will be used again by other students. Record your answers on the IBM sheet by marking the appropriate response space (1,2,3,4,5) for each question.

Please make sure that the question number and the IBM number are the same.

1. During the past six months, has the frequency of your contacts with friends increased, remained about the same, or decreased?
 - 1) Increased considerably
 - 2) Increased somewhat
 - 3) Remained about the same
 - 4) Decreased somewhat
 - 5) Decreased considerably

2. Compared to other people your age, do you think the number of same sex good friends you have is:
 - 1) Much larger than average
 - 2) Larger than average
 - 3) About average
 - 4) Smaller than average
 - 5) Much smaller than average

3. Compared to other people your age, do you think the quality of your relationship(s) with your same sex good friends is:
 - 1) Much better than average
 - 2) Better than average
 - 3) About average
 - 4) Worse than average
 - 5) Much worse than average

4. Compared to last year, do you think your relationships with your same sex good friends are:
- 1) Much better than they were last year
 - 2) Better than they were
 - 3) About the same
 - 4) Worse than they were
 - 5) Much worse than they were
5. During the average day, how much contact do you have with good friends as opposed to contact with acquaintances and strangers?
- 1) Almost all my contacts are with good friends
 - 2) Most of my contacts are with good friends
 - 3) My contacts are about equally divided
 - 4) Most of my contacts are with acquaintances and strangers
 - 5) Almost all my contacts are with acquaintances and strangers
6. On the average weekend, how much of your waking time do you spend alone, by yourself?
- 1) Very little
 - 2) Some
 - 3) About half
 - 4) Quite a lot
 - 5) Almost all
7. How often do you participate in extracurricular school activities--social, athletic, and/or cultural?
- 1) Daily
 - 2) A few times per week
 - 3) Once a week
 - 4) A few times per month
 - 5) Less than once a month
8. Besides extracurricular school activities, how often do you participate, as a member, in the activities of other clubs or teams?
- 1) Daily
 - 2) A few times per week
 - 3) Once a week
 - 4) A few times per month
 - 5) Less than once per month

9. About how often do you participate in church or synagogue related activities?
- 1) Once a week or more
 - 2) Two or three times per month
 - 3) Once a month
 - 4) Less than once a month
 - 5) Not at all
10. Compared to your friends, do you think you participate in social activities:
- 1) Much more frequently than average
 - 2) More frequently
 - 3) About average
 - 4) Less frequently
 - 5) Much less frequently
11. Compared to last year, do you think you participate in social activities:
- 1) Much more frequently than last year
 - 2) More frequently
 - 3) About the same
 - 4) Less frequently
 - 5) Much less frequently

Social Relations

Indicate how often you feel the way described in each of the following statements. Please record the appropriate response on your IBM answer sheet.

	<u>Never</u>	<u>Rarely</u>	<u>Sometimes</u>	<u>Often</u>
12. I feel in tune with the people around me	1	2	3	4
13. I lack companionship	1	2	3	4
14. There is no one I can turn to	1	2	3	4
15. I do not feel alone	1	2	3	4
16. I feel part of a group of friends	1	2	3	4

	<u>Never</u>	<u>Rarely</u>	<u>Sometimes</u>	<u>Often</u>
17. I have a lot in common with the people around me	1	2	3	4
18. I am no longer close to anyone	1	2	3	4
19. My interests and ideas are not shared by those around me	1	2	3	4
20. I am an out going person	1	2	3	4
21. There are people I feel close to	1	2	3	4
22. I feel left out	1	2	3	4
23. My social relationships are superficial	1	2	3	4
24. No one really knows me well	1	2	3	4
25. I feel isolated from others	1	2	3	4
26. I can find companionship when I want it	1	2	3	4
27. There are people who really understand me	1	2	3	4
28. I am unhappy being so withdrawn	1	2	3	4
29. People are around me but not with me	1	2	3	4
30. There are people I can talk to	1	2	3	4
31. There are people I can turn to	1	2	3	4

Dating Relations

Now we would like to ask some questions about your "dating" relationships. By "dating", we mean spending time with or going out with a girl friend or boy friend. Please answer these questions by marking the response that best describes your situation.

32. 1) Not dating at all
 2) Dating one or more people casually
 3) Dating one person steadily
 4) Engaged/married

33. How often during the past two weeks have you dated or spent time with your boyfriend(s) or girlfriend(s)?
- 1) Not at all
 - 2) 1-3 times
 - 3) 4-6 times
 - 4) 7-9 times
 - 5) 10 or more times
34. How important are dating or romantic relationships to you? Mark the number that best represents your answer.
- | | | | | | | |
|-----------|---|---|---|---|---|------------|
| Very | | | | | | |
| Important | 1 | 2 | 3 | 4 | 5 | Not at all |
| | | | | | | Important |
35. Compared to your friends, do you think you are dating:
- 1) Much more frequently
 - 2) More frequently
 - 3) About the same
 - 4) Less frequently
 - 5) Much less frequently
36. Compared to your friends, do you think your dating or romantic relationships are:
- 1) Much better than average
 - 2) Better than average
 - 3) About the same
 - 4) Worse than average
 - 5) Much worse than average
37. Compared to last year, do you think your dating relationships are:
- 1) Much better than they were
 - 2) Better than they were
 - 3) About the same
 - 4) Worse than they were
 - 5) Much worse than they were

Family Relations

Now we would like to get some information about your relationship with your family.

Please indicate how strongly you agree or disagree with each of the following statements by recording the appropriate number on your IBM answer sheet.

	Strongly Agree	Agree	Dis- agree	Strongly Disagree
38. I have a good relationship with most members of my immediate family	1	2	3	4
39. I don't get along very well with my family	1	2	3	4
40. People in my family generally help each other out	1	2	3	4
41. Members of my family give me the kind of support I need	1	2	3	4
42. I seem to have very little to say to members of my family	1	2	3	4
43. <u>Compared to your friends</u> , do you think your relationship with your family is?				
1) Much better than average				
2) Better than average				
3) About average				
4) Worse than average				
5) Much worse than average				
44. Compared to <u>last year</u> , do you think your relationship with your family is:				
1) Much better than it was last year				
2) Better than it was				
3) About the same				
4) Worse than it was				
5) Much worse than it was				

Demographic and Background Information

45. What is your sex?
- _____ 1) Male
- _____ 2) Female
46. Is this the first, second, or third year you have attended this University?
- 1) First
- 2) Second
- 3) Third (or more)
47. How long have you lived in Winnipeg?
- 1) Less than a year
- 2) One to two years
- 3) 3-5 years
- 4) 6-10 years
- 5) More than 10 years
48. How would you describe your current living arrangement?
- 1) Live at home with parents
- 2) Live with other relatives/spouse
- 3) Live with friend(s)
- 4) Live in dormitory
- 5) Live alone
49. In what year of University are you?
- 1) First
- 2) Second
- 3) Third
- 4) Other
50. Is English your first language?
- _____ 1) Yes _____ 2) No
51. Were you born in Canada?
- _____ 1) Yes _____ 2) No

Questionnaire No. _____

Part C

Friendship Experiences

The next set of questions is about your friendship experiences. Read each statement and answer it in terms of your relationships with your "good friends."

Use the rating scale after each statement to indicate how often you have experienced what is described. Remember to answer in terms of your relationships with your "good friends." Circle the number that best represents your answer.

203. "They show appreciation and praise me when I deserve it."

Frequency of experiencing this Never 1 2 3 4 5 6 7 Always

204. "We can express differences of opinion without its coming between us."

Frequency of experiencing this Never 1 2 3 4 5 6 7 Always

205. "They are concerned with my welfare and help promote it."

Frequency of experiencing this Never 1 2 3 4 5 6 7 Always

206. "I feel free to express my most inner private feelings to them."

Frequency of experiencing this Never 1 2 3 4 5 6 7 Always

207. "They really try to see things through my eyes."

Frequency of experiencing this Never 1 2 3 4 5 6 7 Always

208. "They enhance my feelings of self-worth."

Frequency of experiencing this Never 1 2 3 4 5 6 7 Always

209. "I can drop all my defences and be myself with them."

Frequency of experiencing this Never 1 2 3 4 5 6 7 Always

210. "They give readily; I don't have to ask for it."

Frequency of experiencing this Never 1 2 3 4 5 6 7 Always

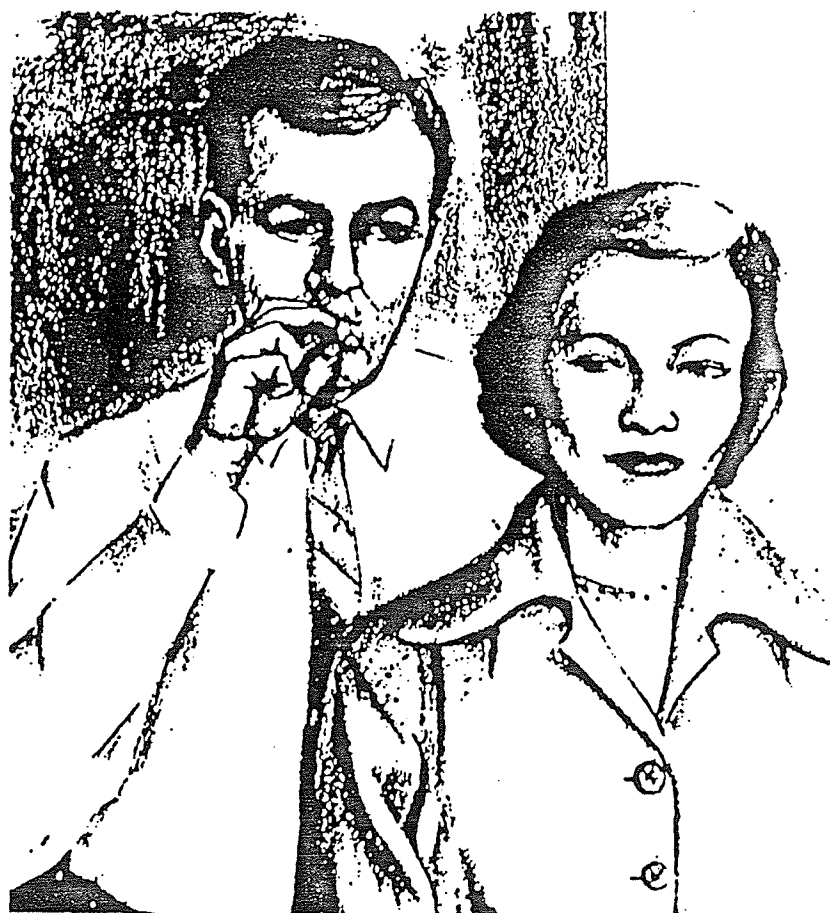
211. "I could talk to them about my personal problems."

Frequency of experiencing this Never 1 2 3 4 5 6 7 Always

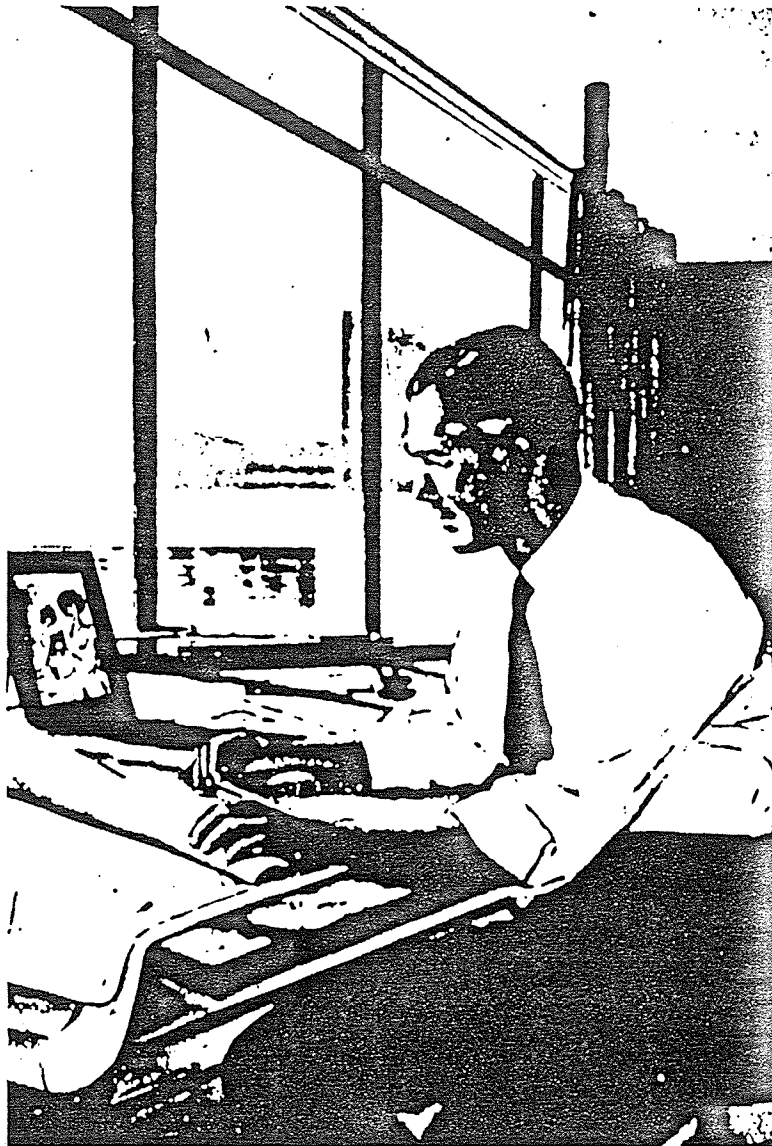
212. "They know how I feel even when I cannot put it into words."

Frequency of experiencing this Never 1 2 3 4 5 6 7 Always

Appendix B







-Who are these people? What are they doing?
(Who is this person? What is he doing?)

-What has led up to this--what went on before?

-What do they want--how do they feel?
(What does he want--how does he feel?)

-What will happen--how will it end?

Appendix C



Dear University of Manitoba Student:

The questionnaire you completed covered a number of topics, including relationships with friends and family, social activities, and feelings about yourself. This questionnaire is part of a larger study being conducted at the University of Manitoba.

A major focus of the study concerns people's social relations and whether they felt lonely. This study is interested primarily in the association between loneliness and the quantity and quality of people's social relations.

Loneliness is not only determined by the levels of social contact we have. It may also be determined by our frames of reference - how much social contact we want, how much contact we have had in the past, and how our level of social activity compares with the level other people achieve. In this study, we are especially interested in how these frames of reference (and the discrepancy between desired and achieved levels of contact) contribute to loneliness.

Other studies have shown that loneliness is a common experience, but that there is more loneliness among young adults and unmarried individuals than among middle-aged or married people. This study is concerned with investigating the factors that may be related to loneliness in adolescents and young adults.

Research has shown that certain circumstances (such as excessive mobility or divorce) may produce loneliness in anyone. In addition to situational factors, there may be personal factors associated with loneliness. Lonely individuals report more self-consciousness in social situations; they are lower in self-esteem, less satisfied with their lives and more pessimistic about the future.

Not surprisingly, people with fewer close friends are more likely to be lonely. However, rather than being particularly open to the formation of new friendships, chronically lonely individuals are frequently more critical of the new people they meet. One general implication of these findings is that a tendency to see things negatively contributes to loneliness. One way of breaking the loneliness cycle, then, is to "think positively".

Another way of decreasing loneliness would be in terms of our "frames of reference" i.e., to set more moderate expectations for social contact. Of course, the most obvious way of overcoming loneliness is to improve existing social relationships.

If you are interested in learning more about the study of loneliness, we would recommend reading the following: Gordon, Suzanne. Lonely in America. Simon and Schuster, New York, 1976; Perlman, D., and Peplau, L. A. Toward a social psychology of loneliness, (on reserve for 17:241-242 in Dafoe Library).

Please do not discuss this study with the other 120 students during the period February 21 to March 5, 1982.

Thank you very much for participating in this survey.

Sincerely,

Daniel Perlman, Ph. D.
Associate Professor

Sheila Goldenberg
Graduate Student

Appendix D

Two criteria were used for checking coder reliabilities:

1. Percentage of agreement between coder and expert for the presence of affiliation related imagery. This index was a ratio of twice the number of times the coder and expert agreed on scoring the presence of affiliation imagery, divided by the number of times coder scored imagery, plus the number of times the expert scored imagery present. (Smith & Feld, 1958).

2. The rank-order correlations were computed by the following formula: (Cohen & Cohen, 1975)

$$r_{\text{ranks}} = 1 - \frac{6 \sum d^2}{n(n^2-1)}$$

Appendix E

Significant Correlations Among Variables

Table 1

Variables	Discrepancy Aff. /Total Achieved	Discrepancy Aff. /Total Frequency	Discrepancy Aff. /# of Friends	Discrepancy Aff. /Social Participation	Discrepancy Aff. /Family Relations
Discrep- ancy La Gaipa	.30**				
Discrep- ancy Aff. / Total Achieved		.46***	.46***	.59***	.61***
Discrep- ancy Aff. / Total Frequency			.93***	.61***	.43***
Discrep- ancy Aff. /# of friends				.61***	.42***
Discrep- ancy Aff. / Social Partici- pation					.44***

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 2

Variables	Number of Friends Compared to Peers	Quality of Friendship Relations Compared to Peers	Participa- tion in Social Activities Compared to Peers	Dating Relations Compared to Peers	Family Relations Compared to Peers
Discrep- ancy La Gaipa		.20*			
Discrep- ancy Aff. / Total Achieved		.44***		.27**	
Discrep- ancy Aff. / Total Frequency	.30**		.26**		
Discrep- ancy Aff. /# of Friends	.30**	.18*	.19*		
Discrep- ancy Aff. / Social Partici- pation	.27**		.23*		
Discrep- ancy Aff. / Family Relations					.35***

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 3

Variables	Change in Frequency of contact with Friends	Number of Friends Compared to Peers	Quality of Friendship Relations Compared to Peers	Friendship Relations Compared to last Year	Participa- tion in Social ac- tivities Compared to Peers
Quality of Friendship Relations Compared to Peers		.24**			
Friendship Relations Compared to Last Year	.37***		.30**		
Participa- tion in Social Activities Compared to Peers	.31***	.53***		.22*	
Participa- tion in Social Activities Compared to Last Year	.28**	.28**		.21*	.46***
Frequency of Dating Compared to Peers	.20*				.25**
Relations with Family Compared to Peers			.30***		

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 4

Variables	Frequency of Dating Compared to Peers	Dating Relations Compared to Peers	Family Relations Compared to Peers
Partici- pation in Social Activities Compared to Last Year	.26**		
Frequency of Dating Compared to Peers	.57***		
Dating Relations Compared to Last Year	.38***	.55***	
Family Relations Compared to Last Year	-.26***		.35***

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 5

Variables	Number of Friends	Proportion of Same Sex Friends	Average Freq. of Contact with Friends	Total Freq. of Contact with Friends	Ideal Number of Friends
Disc. # of Friends					-.99**
Disc. Aff/ Tot Freq	-.48**		.36***	.63***	
Disc. Aff/ # of Friends	-.60***			.57***	
Change in Freq. of con- tact with Friends		.35**	.24*	.23*	
# of Friends Compared to Peers	-.40***		.23*	.43**	
Quality of Friendships Compared to Peers	-.20*			.20*	
Friendship Relations Compared to Last Year		.22*			
Participation in Social Activities Compared to Peers	-.36***	.25**			
Number of Friends		-.22*		-.89***	.32***
Proportion of same sex Friends				.27**	
Ave. Freq. of Contact				.42***	
Total Freq. of Contact					-.33***
Social Participation	-.36***			.36***	

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 6

Variables	Tot. Desired (La Gaipa)	Tot. Achieved (La Gaipa)	Total Affiliation Need	Adjusted Total Affiliation Need
Disc. La Gaipa	.46***	-.48**		
Disc. # of Friends	-.22*	-.22*		
Disc. Aff./ Tot. Achieved	-.40***	-.67***	.59***	.67***
Disc. Aff./ Total Freq.			.59***	.63***
Disc. Aff./# of Friends			.55***	.59***
Disc. Aff./ Social Par- ticipation			.59***	.67***
Disc. Aff./ Family Relations			.64***	.65***
Partic. in Social act. Compared to Peers	-.19*	-.24**		
Freq. of Dating Compared to Peers		-.20*		
Dating Relations Compared to Peers		-.27**		
Dating Relations Compared to Last Year		-.22*		

* $p < .05$

** $p < .01$

*** $p < .001$

Table 7

Variables	Social Participation	Family Relations	Satisfaction with Friendship and Family Relations
Disc. La Gaipa		.28**	.31***
Disc. Aff/ Tot. Achieved			.40***
Disc. Aff/ Tot. Freq.	.21*		
Disc. Aff/ Social Par- ticipation	.66***		
Disc. Aff/ Family Relations		.65***	.41***
Change in Freq. of Contact with Friends			.24**
# of Friends Compared to Peers	.42***	.20*	.21*
Quality of Friendships Compared to Peers			.39***
Friendship Relations Compared to Last Year	.45***		
Dating Relations Compared to Peers			.19***
Family Re- lations Com- pared to Peers		.54***	.31***
Family Re- lations Com- pared to Last Year		.21*	.20*

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 8

Variables	Total Desired (La Gaipa)	Total Achieved (La Gaipa)	Total Affiliation Need	Adjusted Tot. Aff. Need	Satisfaction with Friend- ship & Family Relations
Number of Friends			.28***	.29**	
Tot. Freq. of Contact			-.20*	-.21*	
Ideal # of Friends	.21*	.23*			
Total Desired		.56**			
Total Aff. Need				.94***	
Social Par- ticipation		-.25***			
Family Relations		-.33***			.53***
Satisfac- tion with Friendship and Family Relations	-.28**	-.53***			
Proportion of Same Sex Friends					.24**

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 9

Variables	Satisfaction with Dating Relationship	Satisfaction with Life	Contacts with Friends vs. Strangers	Time Spent Alone on Weekends
Disc. La Gaipa		.27**		
Disc. Aff/ Total Achieved	.24*			.24**
Disc. Aff/ Total Frequency				.20*
Disc. Aff/ # of Friends				.20*
Disc. Aff/ Social Par- ticipation	.23*			
Change in Freq. of Contact with Friends		.29**	.31***	
# of Friends Compared to Peers		.34***	.21*	.22**
Quality of Friendships Compared to Peers		.36***	.25**	.21*
Friendship Relations Compared to Last Year		.26**	.23*	

* $p < .05$

** $p < .01$

*** $p < .001$

Table 10

Variables	Satisfaction with Dating Relations	Satisfaction with Life	Contacts with Friends vs. Strangers	Time Spent Alone on Weekends
Participa- tion in Social Activities Compared to Peers		.28**	.25**	.27**
Participa- tion in Social Activities Compared to Last Year				.24*
Frequency of Dating Compared to Peers	.38***			.30**
Dating Relations Compared to Friends	.54***	.19*		.23*
Dating Relations Compared to Last Year	.40***			
Family Relations Compared to Last Year	-.28**			

* $p < .05$

** $p < .01$

*** $p < .001$

Table 11

Variables	Dating Status	Frequency of Dating	Importance of Dating Relations	Gender	Years at University
Disc. Aff./ Total Achieved	-.26**	-.20*	.28**	-.29**	
Disc. Aff./ Total Frequency	-.21*	-.19*	.19*		
Disc. Aff./ # of Friends	-.22*				
Disc. Aff./ Social Par- ticipation	-.19*				-.20*
Disc. Aff./ Family Relations					-.19*
Frequency of Dating Compared to Peers	-.56***	-.59***	.46***		
Dating Relations Compared to Peers	-.62***	-.48***	.58***		
Dating Relations Compared to Last Year	-.50***	-.40***	.50***	-.29**	
Family Relations Compared to Last Year		.19*			

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 12

Variables	Satisfaction with Dating Relations	Satisfaction with Life	Contact with Friends vs. Strangers	Time Spent Alone on Weekends
Number of Friends		-.22*	-.23*	
Average Freq. of Contact			.29**	
Total Freq. of Contact		.19*	.32***	
Total Achieved		.36***		
Total Aff. Need	.22*		-.19*	
Adjusted Total Aff. Need			-.21*	
Family Relations		.28**		
Satisfaction with Friendship and Family Relations		.42***		.33***

* $p < .05$

** $p < .01$

*** $p < .001$

Table 13

Variables	Dating Status	Frequency of Dating	Importance of Dating Relations	Gender
Total Desired				.25**
Total Achieved	.21*		-.25**	.35***
Satisfaction with Friendship and Family Relations	-.23*	-.19*		-.23*
Satisfaction with Dating Relations	-.47***	-.45***	.35***	
Dating Status		.65***	-.55***	.35***
Frequency of Dating			-.46***	.25**
Living Arrangement	.22*			
Born in Canada		-.22*		

* $p < .05$
 ** $p < .01$
 *** $p < .001$

Table 14

Variables	Satisfaction with Dating Relations	Satisfaction with Life	Age	Time Spent Alone on Week end	Family Relations
Contacts with Friends vs. Strangers			.22*		
Time Alone on Week end	.41***				
Dating Status	-.47***		.32**	-.26**	
Frequency of Dating	-.45***			-.37***	
Importance of Dating Relations	.35***				
Number of Years at University			.23*		.19*
Living Arrangement		.25**	.27**		
English as First Language			.20*		

* $p < .05$

** $p < .01$

*** $p < .001$

Variables	Number of Years in Winnipeg	English as First Language	Born in Canada
Number of Friends Compared to Peers			.19*
Relationships with Friends Com- pared to Last Year	.20*		
Participation in Social Activities Compared to Peers		.22*	
Dating Relations Compared to Peers		.19*	
Dating Relations Compared to Last Year		.21*	.20*
Family Relations Compared to Peers			-.28**
Family Relations Compared to Last Year	.26**		
Number of Friends	.22*		
Proportion of Same sex Friends	.21*		
Ideal Number of Friends		-.20*	
Total Achieved		-.19*	
Living Arrangement	-.60***		

* $p < .05$

** $p < .01$

*** $p < .001$