

DEVELOPMENTAL ANTECEDENTS OF
LONELINESS IN YOUNG ADULTS

By

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Bachelor of Science

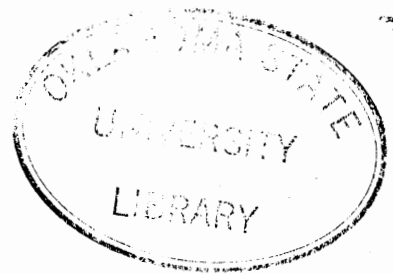
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CHAPTER I

INTRODUCTION

Loneliness is a subject surrounded by prohibitions and embarrassments. Those affected by it are caught up in a spiral of self-reinforcing isolation. Many who suffer from it feel that it is the result of personal unworthiness. It is something they are ashamed of. In order to be able to talk about it, they must have circumstances, or better still, individuals to blame (Seabrook, 1973, p. 9).

Overview

Loneliness is a pervasive human condition, characterized by negative affect and disappointment in one's social and emotional relationships. It has been speculated (Tanner, 1973) that loneliness is the single most common problem people face and, indeed, there is research evidence to support its prevalence. Weiss (1973) reported that 26% of a representative American sample had been lonely within the past few weeks, with one in nine experiencing severe loneliness within the preceding week. Using a problem checklist, Brehm (1979) found that over 32% of freshmen and over 26% of sophomore women considered loneliness to be a problem; larger percentages than for endorsements of homesickness, breaking away from parents, and making new friends.

Loneliness: Theory

Although the phenomenon of loneliness has been extensively discussed, much of the literature approaches the topic from a theoretical rather than an empirical stance. From the former perspective, loneliness has been variously described as a driving experience resulting from the inadequate discharge of the need for human intimacy (Sullivan, cited in Weiss, 1973), the absence of a desired relationship (Moreno, cited in Wood, 1953), estrangement from significant others (Sadler, 1974), and fear of being alone (Deutsch, 1967). Becker (1974) proposes that man is a self-conscious being, but, because self-validation is impossible, is dependent on others to serve the validating function. Loneliness is an unavoidable consequence of this dependency. Becker further suggests five varieties of loneliness: (1) developmental - children's reliance on a succoring object in order to test their conditions of worth, (2) neurotic - over-attachment to a succoring object during adulthood, (3) maturational - the cultural identity crisis of adolescence, (4) social-environmental - societal patterns that separate people from each other, and (5) the extreme loneliness of psychosis.

Other authors have also theorized about characteristics and typologies of loneliness. Sadler (1974) states that one's perception of estrangement is the result of any one or a combination of four dimensions of loneliness: (1) cosmic - estrangement from religion and/or nature, (2)

cultural - the result of immigration or social alienation, (3) social - the result of role and/or identity diffusion, and (4) interpersonal - a consequence of the need to love and be loved.

Moustakas (1961), writing within an existential orientation, suggests two types of loneliness, one growth-enhancing and the other growth-inhibiting. The former, existential loneliness, Moustakas considers to be an inevitable part of human existence and a means of gaining awareness of the self, increased interpersonal sensitivity, and inner strength. The latter, loneliness anxiety, he sees as the response to an unloving world, resulting in the defensive inability to relate authentically to others.

One attempt to develop a typology of loneliness (Weiss, 1973) has provided a stimulus for empirical investigation. According to Weiss' rationale, social loneliness exists when situational factors are responsible for the loss of accustomed sources of interaction. Such experiences, brought about by geographic mobility, death, etc., are usually of brief duration and the ensuing feelings of boredom and marginality are presumed to terminate spontaneously when new social networks are established. Emotional loneliness, on the other hand, is suggested to have a more internal locus. Weiss likens it to the anxiety of childhood abandonment in which the individual maintains hyper-alertness to social cues in his or her restless search for a satisfactory relationship. Unlike social loneliness

which results from the diminution of social contacts, emotional loneliness can occur within an environment that offers a sufficient number of opportunities for interpersonal relationships to develop.

Loneliness: Empirical Findings

Although research has not supported Weiss' differentiation of loneliness types (Brennan & Auslander, 1979; Ferguson, date unavailable), there is substantial empirical support for the persistence of loneliness in the face of social opportunity. Several studies, employing a variety of self-report measures of loneliness, have found no differences in the number of social contacts encountered by lonely and not-lonely subjects (Cutrona & Peplau, 1979; Hockenbury, Jones, Kranau, & Hobbs, 1978; Munnichs, 1964; Perlman, Gerson, & Spinner, 1978; Sermat, 1975; Wood, 1979), yet lonely individuals report having fewer "friends" (Hockenbury et al., 1978; Perlman et al., 1978; Ross, 1979). Only one study (Russell, Peplau, & Cutrona, 1979) has reported that lonely persons spend more time alone (i.e., dining alone, weekend evenings alone, fewer social activities with friends).

A consistent theme in the literature, however, is lonely individuals' dissatisfaction with the quality of their social relationships. Bragg (1979), exploring the interaction between depression and loneliness, found lonely subjects to be significantly less happy with their social

relationships than were their not-lonely counterparts, regardless of the presence or absence of depression. Investigating various aspects of subjects' social lives, Cutrona and Peplau (1979) found that in all subcategories (friends, dating, and family), subjective (qualitative) factors were better predictors of current loneliness than were objective (quantitative) indices. Furthermore, lonely and not-lonely individuals were most disparate in their satisfaction with their friendships. Similar results have been obtained by Ferguson (date unavailable) and Sermat (1975).

In accordance with Weiss' characterization of the emotionally lonely person, loneliness has been shown to be associated with a number of internal dimensions - all with negative connotations. Significant correlations between loneliness and feelings of boredom, emptiness, depression, and anger, as well as inverse correlations with happiness and satisfaction have been consistently observed (Perlman et al., 1978; Russell, Peplau, & Ferguson, 1978; Shaver & Rubenstein, 1979). Lonely individuals also report more powerlessness, normlessness, and social isolation; greater shyness, self-consciousness, and social anxiety; and a more external locus of control (Jones, Freeman, & Goswick, in press; Paloutzian & Ellison, 1979; Solano, 1979).

The subjective aspect of loneliness previously discussed (i.e., the experience of interpersonal dissatisfaction) is underscored by evidence that suggests that lonely persons are disposed to negatively evaluate those with whom

they come in contact. Jones et al. (in press), using standardized attitude scales, found loneliness to be inversely correlated with acceptance of others and the belief that other people are trustworthy and altruistic. Two further studies (Goswick, 1978; Jones et al., in press), one using stranger dyads and the other assessing an ongoing group, reported that subjects were more negatively evaluated by those who were lonely. However, the lonely individuals were not, themselves, differentially rated, although they predicted that they would be.

Lonely persons' expectations of negative evaluations from others is in agreement with their evaluations of themselves. The literature repeatedly demonstrates the inverse relationship between loneliness and self-concept (Jones et al., in press; Paloutzian & Ellison, 1979; Rosenberg, 1965; Russell et al., 1978; Shaver & Rubenstein, 1979; Siegel, Siegel, & Siegel, 1978; Wood, 1979). One such study (Goswick, 1978) differentiated among various components of self-concept and found loneliness to be negatively related to subjects' self-identity and satisfaction with both identity and perceived quality of functioning. Physical, personal, and social self-concepts were also inversely correlated with loneliness, although there were no effects for family and moral-ethical self measures. In addition, lonely subjects as a group were found to have a significantly greater frequency of self-concept scores so low as to be of clinical importance.

The picture that emerges of lonely individuals is that they think poorly of themselves and expect little from others, in spite of the availability of social contact and the apparent willingness of others to accept them. Self theory proposes that people exist in their phenomenal world, constructing their own realities and acting in accordance with them (Patterson, 1976). Adjustment, from this perspective, is characterized by an openness to experience and ready modification of the self-concept in response to contrary evidence. In contrast, maladjustment involves constriction of the phenomenological field so that only those experiences which reaffirm and maintain the existing self-concept are perceived and assimilated (Beck, 1974; Mullahy, 1976; Scott, 1976). Within this theoretical framework, loneliness may be conceptualized as the same type of self-defeating pattern which is characteristic of maladjustment. Indeed, it appears that some people are characteristically more lonely than others and that these relative differences persist beyond the expected duration of situational determinants (Goswick, 1978; Russell et al., 1978). Loneliness also appears to persist in proportion to the degree to which the individual attributes the cause of his or her loneliness to personal factors (Peplau, Russell, & Heim, cited in Perlman & Peplau, in preparation). The clinical significance of such a self-fulfilling phenomenon is evident, and is further substantiated by research associating loneliness to increased alcohol intake (Jones & Adams, 1978;

Sadler, 1974), psychosomatic anxiety symptoms (Halmos, 1953), self-destructive behaviors (Sadler, 1974), and neurosis (Goswick & Jones, 1979).

Statement of the Problem

Research has identified a number of factors which exist concurrently with what might be termed the loneliness syndrome. These factors, whether cause or effect, are sufficiently debilitating to the individual's state of well-being as to strongly suggest that loneliness is more severe than a condition of temporary distress. More information is needed in order to clarify (1) what current conditions are associated with loneliness, (2) whether or not developmental experiences predispose an individual toward becoming a lonely adult, and (3) what modes of intervention might successfully terminate the lonely cycle. The present study focuses on the first and second of these issues on the assumption that further information will better direct intervention attempts. The factors selected for investigation include current living arrangements and developmental experiences in the areas of (1) the family, (2) peers, (3) school, and (4) anxiety indices. These particular topics were based on the following literature.

Selected Literature Review

Current Living Arrangements

The relationship between loneliness and living arrange-

ments has been marginally explored within the college student population. However, the findings are inconsistent, perhaps because of the different ways in which the research questions have been stated. Ross (1979) found a progressive increase in loneliness for those students living in dorms, living with parents, and living off-campus. In contrast, no differences in loneliness were observed as a function of either the type of domicile inhabited (Ferrara, 1979) or whether or not the subject lived alone (Wood, 1979). One study, (Ferrara, 1979) also discovered an inverse linear relationship between loneliness and the students' distance from their home towns.

Research has substantiated the importance of satisfaction with friendships in the current experience of loneliness (see discussion, pp. 4-5), but data are nonexistent on attitudes about those with whom the individual shares his or her living space. Hurlock (1964) and Levinson (1972) have theorized that pets may serve something of the same function as friends and family, particularly in alleviating feelings of abandonment and isolation, but empirical evidence in this area is also lacking.

Family Experiences

According to theory (Hurlock, 1964), individuals learn to conform to three criteria in the process of social development: (1) behaving in accordance with group norms, (2) playing approved social roles, and (3) maintaining social

attitudes which foster a sense of cooperation and intercommunication. Failure to achieve or opposition to these criteria results in unsatisfactory interpersonal relationships because of rejection by others, rejection of others, or the compulsive craving for company at the expense of intimacy. Socialization begins within the family from the moment of birth; therefore, the attitudes developed within that environment form the basis for all subsequent social experiences.

Becker (1974) proposes that within the family, the young child has his or her first opportunities to establish the parents' conditions of worth, i.e., how he or she qualifies for love and protection. It has been further hypothesized (Bowlby, 1973a, 1973b) that if children can rely on unfailing parental support when needed, steady and timely encouragement toward autonomy, and adequate role models, they develop the needed self-reliance to continue their social development. However, "insecure or anxious attachments" may form if children are subjected to real or threatened separations from their primary attachment figures. In support of this position, Brennan and Auslander (1979) found significantly higher levels of loneliness among those adolescents who perceived their parents as being disinterested, rejecting, non-nurturing, either overly protective or overly strict, and as offering little support for the child's development of popularity, autonomy, or success. Similarly, Fagin (cited in Bowlby, 1973b)

reported that young children hospitalized for a week or less demonstrated more clinging behavior as long as a month after confinement if their mothers had not stayed in the hospital with them.

Although it has been recognized that socialization depends on the total family environment (Hurlock, 1964), a large proportion of the theoretical literature focuses on the mother's parental style. Moore (cited in Bowlby, 1973b) suggests that the mother's failure to respond to her child's sincere bids for attention will lead to anxious attachments in girls and detachment in boys, patterns which may continue into adolescence. On the other hand, Deutsch (1967) proposes that adolescent boys whose mothers demonstrate excessive devotion and emotional investment are also likely to be socially alienated and to have difficulties with emotional closeness.

The majority of the empirical literature on socialization within the family points to the importance of the quality of familial relationships rather than to specific child-rearing practices. For example, attachment behavior has been found to be unrelated to the method of infant feeding, weaning, toilet training, or birth order (Bowlby, 1969; Wood, 1979). However, Hurlock (1964) reported that the presence, spacing, and sex of siblings influenced the child's social relationships outside of the family. Specifically, she observed that only children or those with widely-spaced siblings were more withdrawn and that children

with only same-sex siblings were less inclined to make friends with others of the opposite sex (although they had no problems with members of their own sex).

Disruption of the family unit has also been shown to negatively affect development. In a study of college students, Halmos (1953) found that subjects who had experienced a broken home prior to age five had significantly lower adult sociability scores, reported more difficulty in making friends, and were more likely to consider themselves "friendless." Shaver and Rubenstein (1979) observed that adolescents whose parents were divorced were significantly more lonely than were those whose parents were married to each other or who had experienced the death of a parent (the latter two groups did not differ from each other). In addition, the authors identified an inverse relationship between adolescent loneliness and the subjects' ages at the time of the divorce. Similarly, adolescents whose mothers married young, had children early in the marriage, and were then divorced prior to age 24 were more likely to be presently lonely (Rosenberg, 1965).

Peer Relationships

The socialization process which is begun within the family is rapidly and increasingly assumed by peers as the child matures. Although early patterns of social attitudes remain relatively constant, they can be changed by experiences with a peer group (which may become a more important

source of influence than the family by age seven, according to Hurlock, 1964).

Many children have a "best friend" by the time they are seven or eight, although some remain more group-oriented. It has been theorized that these friends enable the developing child to experiment with a variety of personalities in the development of his or her own identity (Brenton, 1975) and to learn personal accountability in relationships with equals (Konopka, 1976). Throughout the school years, children have strong peer group needs which are characterized by the desire for acceptance and the attempt to be like others in dress and manner (Hurlock, 1964; Konopka, 1976). Observation has indicated that this acceptance may be lacking, however, if the child is too different from the majority; is quiet and withdrawn; attempts to gain attention through aggression, teasing, or silliness; or displays poor social skills (Hurlock, 1964; Siegel et al., 1978).

Although making no causal inferences, Brennan and Auslander (1979) found that shy adolescents were more lonely than were those who were not shy. Members of the lonely group were also likely to express mistrust of their peers, feelings of social powerlessness, pessimistic attitudes concerning their peers' interest in and respect for them, and disinterest in gaining popularity. Behaviorally, the lonely adolescents reported spending more time alone, less time with peers, and less dating activity. The latter

finding has been further substantiated at the college level (Russell et al., 1979).

School Experiences

Bowlby (1969) hypothesized that, in addition to family and peers, school can become a principal or subordinate attachment figure. However, school can also be problematic for social relationships. Robert (1973) has suggested that there is a growing estrangement of individuals in the school system which is exacerbated by such practices as ability-grouping, isolation of "special" students, age/grade placement, and rules which attempt to prohibit talking in class and cooperative work.

Problems in the interpersonal area may be reflected in school performance and attitudes. Loneliness among both adolescents and graduate students has been found to be associated with lower grade point averages (Brennan & Auslander, 1979; Ferrara, 1979; Tanner, 1973), inadequate completion of assignments, and being labeled by the teacher as a "problem" student (Brennan & Auslander, 1979; Brenton, 1975). In addition to the behavioral component, Brennan and Auslander (1979) found that lonely students were more likely than those who were not lonely to perceive their teachers as disinterested in them and to, themselves, express negative attitudes toward their teachers, school in general, and school-related social activities.

Indices of Anxiety

As previously discussed (see p. 5), loneliness is frequently associated with anxiety regarding social interactions. Anxiety per se is sometimes transmuted into psychophysiological symptoms, and research suggests that this phenomenon may occur in relation to the anxiety that apparently accompanies loneliness. Through clinical observation, Novello (cited in Brenton, 1975) found that lonely children may manifest their social anxiety through bedwetting, headaches, nausea, and eating or sleeping difficulties. Similarly, loneliness in adolescents has been correlated with headaches, digestive problems, insomnia, phobias, tiredness, worry, and trouble with concentration (Shaver & Rubenstein, 1979). Paloutzian and Ellison (1979) also found loneliness to correlate with tiredness and, additionally, with chest tightness in adults, but found no relationship with headache, upset stomach, faintness, or shortness of breath.

Scope of the Study

The literature just discussed provided the rationale for the focus of the study as identified in Statement of the Problem (see p. 8). Although a number of hypotheses were proposed (see below), the study was originally designed as an exploratory endeavor. Two questionnaires, the Personal Data Questionnaire (PDQ) and the Developmental Experiences Scale (DES), were created by the present author to classify and or quantify the variables of interest. The

Revised UCLA Loneliness Scale (Russell et al., 1979) was used as the measure of subjects' current loneliness. These instruments are presented in Appendix A and discussed in Chapter II. Because of the global scope of the study, the actual analyses were dependent on the characteristics of the obtained sample. Therefore, in assessing the findings, some hypotheses and research questions were either altered or dropped. Such modifications will be identified in Chapters II and III.

Hypotheses

The following hypotheses were formulated on the basis of the topics discussed in the section of this chapter entitled Selected Literature Review (see pp. 8-15). For each hypothesis, the parenthetical material indicates the source or sources on which it was based and the questionnaire and item number from which the data were obtained.

Current Living Arrangements

1. Loneliness scores will vary as a function of distance from home town (Ferrara, 1979: PDQ-11).
2. Subjects with a pet will be less lonely than will subjects without a pet (Hurlock, 1964; Levinson, 1972: PDQ-16).

Family Experiences

3. Only children will have higher loneliness scores

than will subjects with siblings (Hurlock, 1964: PDQ-6).

4. Subjects whose parents are divorced or separated will have higher loneliness scores than will subjects whose parents are married to each other or who have lost a parent through death (Shaver & Rubenstein, 1979: PDQ-7).

5. For those subjects whose parents are not married to each other or who have lost a parent through death, loneliness will be inversely correlated with the age at which the familial disruption occurred (Halmos, 1953; Rosenberg, 1965; Shaver & Rubenstein, 1979: PDQ-8).

6. Subjects who were confined for one month or more (through illness, accident, etc.) will be more lonely than will subjects who were not confined for that long a period (Fagin, cited in Bowlby, 1973b: PDQ-18).

Research Questions

The following is a list of questions addressed by the present study. In some cases, research questions were extrapolated from the literature and those sources are indicated in the manner used above. Other queries are purely intuitive. For both types, questionnaires and item numbers are indicated.

Current Living Arrangements

1. Will loneliness scores be related to subjects' type of domicile (Ferrara, 1979: PDQ-11)?

2. Will loneliness vary as a function of the nature

of the relationship with (e.g., parent, roommate, etc.) or absence of other people within the subjects' domicile (Ross, 1979; Wood, 1979: PDQ-13)?

3. Will loneliness vary as a function of subjects' perceived level of intimacy with their roommate (PDQ-14)?

4. Will subjects who have never lived away from their parents for more than two months prior to the current school year be more lonely than subjects who have previously lived away (PDQ-15)?

5. Will loneliness vary as a function of subjects' type of pet (i.e., warm-blooded vs. cold-blooded) (PDQ-17)?

Family Experiences

6. For subjects with siblings, will loneliness vary as a function of birth order (Bowlby, 1969; Wood, 1979: PDQ-6)?

7. For those subjects whose parents are divorced or deceased, will loneliness vary as a function of where the subject resided after the familial disruption occurred (PDQ-9)?

8. For those subjects whose parents are divorced or separated, how will loneliness correlate with the frequency of visitation from the nonresident parent (PDQ-10)?

9. What remembered experiences regarding the subjects' parents will best predict current loneliness scores (Bowlby, 1973a, 1973b; Brennan & Auslander, 1979: DES-2,4,7,10,13, 16,19,21,24,27,29,34,36,40,42,46,49,51,58,59,63,65,70,73,78,

80,85,87,92,93,95,98,100)?

Peer Relationships

10. Will current loneliness vary as a function of whether subjects perceived themselves as reaching puberty earlier, the same time, or later than their peers (PDQ-20)?

11. Will loneliness vary as a function of the age at which subjects had their first date (PDQ-21)?

12. Will current loneliness be correlated with subjects' high school dating frequency (Brennan & Auslander, 1979; Russell et al., 1979; PDQ-22)?

13. What remembered experiences regarding the subjects' peers will best predict current loneliness scores (Brennan & Auslander, 1979; Hurlock, 1964; Siegel et al., 1978: DES-1,3,5,8,12,18,20,23,26,28,31,33,37,39,41,44,47, 50,53,54,56,61,64,67,69,72,74,77,83,86,88,89,94,96,97)?

School Experiences

14. What remembered school experiences will best predict subjects' current loneliness scores (Brennan & Auslander, 1979; Brenton, 1975; Ferrara, 1979; Tanner, 1973: DES-11,14,17,22,25,30,32,43,52,57,60,66,68,76,79,82,90,99)?

Indices of Anxiety

15. What remembered psychophysiological symptoms and self-perceptions will best predict subjects' current loneliness scores (Novello, cited in Brenton, 1975; Shaver &

Rubenstein, 1979: DES-6,9,15,35,38,45,55,62,71,75,81,84,
91)?

CHAPTER II

METHOD

Subjects

Questionnaires were administered to 239 undergraduates enrolled in Introduction to Psychology at a major state university in the southwest in exchange for one point extra credit. From that number, a sample of 99 males and 102 females was selected on the basis of the following criteria: (1) 17-20 years old, inclusively, (2) unmarried, (3) Euro-American, (4) U.S. citizen. Subjects were surveyed in large groups which met outside of class. Six sessions were required to complete data collection.

Materials

Personal Data Questionnaire

The Personal Data Questionnaire (see Appendix A) is a 26-item instrument designed for the present study in order to restrict the sample to those subjects having the aforementioned characteristics and to identify independent variables for subsequent analyses. The independent variables include the following categories: (1) sex, (2) characteristics of the subjects' families, (3) current living

arrangements, (4) hospitalization or other confinement, (5) dating experiences, and (6) recent emotional upset. The majority of the items are presented in fixed-alternative format, with a few items (e.g., age) requiring subjects to fill in a blank. Independent variables were selected on the basis of prior research and theory (Bowlby, 1973b; Cutrona & Peplau, 1979; Halmos, 1953; Rosenberg, 1965; Ross, 1979; Shaver & Rubenstein, 1979; Tanner, 1973; Wood, 1979) and intuitive considerations.

Revised UCLA Loneliness Scale

Appendix A contains the Revised UCLA Loneliness Scale (RLS). The RLS (Russell et al., 1979) is a 20-item Likert-style instrument in which subjects are asked to indicate their degree of endorsement of statements which are theoretically related to loneliness. Statements refer to such experiences as perceived aloneness, social isolation, and disturbed interpersonal relations, with equal numbers of items worded in a positive and negative direction to control for response bias. The scale's concurrent validity has been demonstrated by significant correlations with indices of depression, anxiety, and other negative affective states, as well as through its ability to identify those individuals reporting interpersonal estrangement (e.g., amount of time spent alone, number of activities with close friends). Although RLS scores have been reliably associated with such similar constructs as depression and self-esteem,

a study designed to investigate the scale's discriminative validity found that the combination of social risk-taking, negative affect, and affiliative tendencies accounted for only 43% of the variance (Russell et al., 1979). Internal consistency has been reported as .94 in two studies using 162 and 232 subjects. The RLS correlated quite highly ($r = .91$) with the original UCLA Loneliness Scale (Russell et al., 1978) which displayed test-retest reliability of over .70 for a two-month period in two separate studies (Goswick, 1978; Russell et al., 1978). No significant effects for gender or social desirability have been observed.

Developmental Experiences Scale

The Developmental Experiences Scale (DES), found in Appendix A, is a 100-item Likert style questionnaire developed for the present study in which subjects are asked to indicate their degree of endorsement of statements referring to prior experiences. Subjects are asked to respond three times to each item, once each for their grade school, junior high, and high school years. The item categories were established on the basis of extant theory and research (Bowlby, 1973b; Brennan & Auslander, 1979; Brenton, 1975; Deutsch, 1967; Halmos, 1953; Konopka, 1976; Mullahy, 1976; Paloutzian & Ellison, 1979; Robert, 1973; Shaver & Rubenstein, 1979; Siegel et al., 1978; Tanner, 1973; Weiss, 1973; Wood, 1953) and include the following content areas:

1. parents--subjects' perceptions of parental beha-

vivors and attitudes, and attitudes toward parents.

2. peers--subjects' perceptions of peer behaviors and attitudes, and attitudes toward peers.

3. school--subjects' school experiences, including both performance and attitudes.

4. anxiety--somatic, behavioral, and emotional indices of anxiety.

Preceding the DES are eight additional items which inquire as to the clarity of memory for and frequency of reminiscence of each of the three developmental periods, and the happiest and least happy periods of the subjects' lives. These questions were included both as empirical variables and to provide a partial check on the validity of the information obtained from the DES.

Procedure

Subjects completed the Personal Data Questionnaire, Revised UCLA Loneliness Scale, and the Developmental Experiences Scale, in that order, during a single session. Each session lasted approximately 45 minutes. Subjects were asked to read the first page of instructions (see Appendix A) and were given the opportunity to ask questions and/or withdraw before proceeding. The survey was completed at the subjects' own pace and, upon completion, each individual was given printed debriefing information (see Appendix A). Sign-up sheets were also available on which subjects could leave their names and addresses if they desired information

regarding the outcome of the study. The experimenter was available throughout the testing session to answer questions and to offer additional debriefing for interested subjects.

Experimental Design and Analyses

Because of their differing formats, the Personal Data Questionnaire (PDQ) and the Developmental Experiences Scale (DES) were suited to different types of analyses. Therefore, they will be discussed separately in this section. For both, loneliness (as measured by the Revised UCLA Loneliness Scale) served as the dependent variable.

Personal Data Questionnaire

In the development of the PDQ, a large number of potential independent variables were included with the expectation that some variables and/or levels of variables would have to be eliminated or altered. This was, in fact, the case. Because of the homogeneity of the sample, some of the proposed analyses could not be conducted (i.e., subjects clustered at a single variable level). The resulting design of this part of the study was a $2 \times 3 \times 2 \times 2 \times 3 \times 2 \times 3 \times 3 \times 4 \times 2 \times 2 \times 3 \times 4$ Static Groups design in the analysis of thirteen independent variables. The variables that were retained and the levels of each may be found in Table I.

Although no hypothesis or research question was directed toward the effects of gender, sex was included as a blocking variable in the analysis of each independent vari-

TABLE I
INDEPENDENT VARIABLES

Variables	Levels
Gender	Male Female
Parents' Status	Married to each other Divorced, widowed, etc.
Birth Order	First born Middle child Last born
Distance from Home Town	0-50 miles 50-100 miles Over 100 miles
Previous Separation from Parents	Yes No
Relationship with Roommate	Casual friend or less Close friend
Current Problem	Yes No
Relative Age of Puberty	Earlier than peers Same time as peers Later than peers
Age at First Date	14 or younger 15-16 17 or older
Number of Steadies	None One Two Three or more
Longest Period of Going Steady	Nine months or less Over nine months
Happiest Time of Life	Junior high or before High school After high school
Least Happy Time of Life	Grade school or before Junior high High school After high school

ables. Consequently, for each of the independent variables, two-factor ANOVA's were used to detect between-group differences and the interaction of sex with the other factors. Where significant effects were observed for variables with more than two levels, polynomial regression was employed to identify trends in the data. All tests used a .05 level of significance.

Two additional variables obtained from the PDQ were more appropriately tested by correlational analyses. Pearson product-moment coefficients of correlation were obtained for loneliness and each of the following:

Age at which familial disruption occurred

High school dating frequency

A .05 level of significance was employed for each of the correlations.

Developmental Experiences Scale

The DES contains items reflecting four categories of experiences (family, peer, school, and self-perceptions and indices of anxiety) at each of three age levels (grade school, junior high, and high school). A stepwise multiple regression procedure was used to determine which combination of items at each age level would best predict current loneliness scores. Data from male and female subjects were treated separately. For each of the six analyses, items were added to or retained in the regression equation if their inclusion was significant at the .05 level.

Limitations of the Study

A large proportion of social scientific research has employed paper and pencil instruments in order to measure the variables of interest. However, these techniques have been the target of a number of criticisms on the following grounds: limited predictive ability, subjects' lack of self-awareness, response biases, and the lack of objectivity in measurement. It must be acknowledged that human attitudes and behaviors are greatly influenced by the contingencies and constraints of the situation and, therefore, are not totally the product of the individual (Hogan, DeSoto, & Solano, 1977; Mischel, 1968; Mischel, 1977). However, in the assessment of subjective states (e.g., loneliness) the variable in question may be difficult to induce experimentally and/or a more external measurement technique (e.g., observer ratings of behavior) may be no more valid than the subject's self-report (Bem, 1967). In addition, some subjects (e.g., children) may be difficult to sample and/or may pose problems in data collection because of limited abilities to conceptualize and verbalize relevant information.

Lack of self-awareness and response biases may pose difficulties from a methodological standpoint. Bradburn (1969), in a review of the self-report literature, suggested that individuals may not be able or may choose not to tell the truth or may attempt to present themselves in a socially desirable manner, yet his review found self-report to be no

less valid than any other measure of subjective states. Guilford's (1967) classic studies of response sets identified a number of problem areas (e.g., individualistic interpretation of item wording, acquiescence, and falsification), yet he has also made suggestions for their minimization. The present study has attempted to follow Guilford's recommendations by (1) structuring the survey sufficiently and providing adequate instructions, (2) using a predominately fixed-alternative format, (3) placing no time limit on completion, (4) including positive and negative, reversed, and duplicate items, and (5) relying largely on Likert-style scales which have been shown to be superior to other types of scales in research on subjective states (Kerlinger, 1964; Tittle & Hill, 1970). The present study has one additional limitation in that all items on the DES require memory for past experiences and feelings. It would be foolish to assume that responses to these items would give a completely accurate account of the past. Positive and negative experiences may be differentially remembered, memory may be influenced by subjects' current emotional state (perhaps including their current degree of loneliness), and subjects may differ greatly in their degree of attention to and subsequent memory for particular items on the Developmental Experiences Scale. The items preceding the DES which inquire about the subjects' clarity of memory were included in an attempt to address these problems, yet distortion cannot be entirely eliminated. It must be remembered that the

present study is exploratory in nature and that many of the findings will need further clarification. At this time, however, the economy of the self-report method justifies its use for the purpose of offering preliminary information.

CHAPTER III

RESULTS

In this chapter, the results of the analyses of the various hypotheses and research questions are presented in the order in which they were introduced in Chapter I. Some additional analyses follow the five main categories of Current Living Arrangements, Family Experiences, Peer Relationships, School Experiences, and Indices of Anxiety, and are included in a section entitled Miscellaneous. Those hypotheses and questions which were not testable will be identified within their appropriate categories.

Prior to the analyses that were the focus of the present study, the data obtained from the Revised UCLA Loneliness Scale were inspected. As has been found in other research using both the original and revised forms of the RLS, no gender effects were observed, $t(197) = 1.92, p > .05$. The distribution of loneliness scores was found to have a median of 35, comparable to the median of 35.1 reported in the scale's validation study (Russell et al., 1979). These findings suggest that the present sample is representative, at least in terms of the loneliness variable.

Current Living Arrangements

It was not possible to test the effects on current loneliness of type of domicile (Research Question 1), relationship to or absence of others within the domicile (Research Question 2), presence or absence of a pet (Hypothesis 2), or type of pet (Research Question 5). The vast majority of the sample lived in dorms, had roommates, and had no pets residing with them.

For the remaining hypotheses and questions, two-factor ANOVA's on loneliness scores identified no significant main or interaction effects for gender (with one exception) and either distance from home town (Hypothesis 1), previous separation from parents (Research Question 4), or perceived level of intimacy with roommate (Research Question 3). Because of the paucity of subjects living farther than 250 miles from home, the more extreme distances had to be combined into an "over 100 miles" level of the factor (the implications of this combination will be discussed in Chapter IV). Subsequently, it was found that subjects who live 50 miles or less, 50 to 100 miles, or over 100 miles from their home towns are not differentially lonely. Similarly, loneliness was unrelated to whether or not subjects had previously lived apart from their parents for more than two months. In this analysis, a significant main effect for gender was observed, with males being more lonely than females, $F(1,178) = 5.40, p < .05$. This discrepancy with the t test for gender differences in loneliness scores is attri-

butable to the fact that the item referring to previous separation from parents was restricted to those subjects not currently living with parents and also to some subjects' failure to respond. Mean loneliness scores for these variables are presented in Table II and the corresponding ANOVA summary tables may be found in Appendix B, Tables XII and XIII.

TABLE II
MEAN LONELINESS SCORES AS A FUNCTION OF GENDER
AND ASPECTS OF SUBJECTS' CURRENT
LIVING ARRANGEMENTS

Variable	Sex	
	Males	Females
Distance from home town		
0-50 miles	35.00	36.17
50-100 miles	38.85	35.23
Over 100 miles	36.60	34.71
Previous separation from parents		
Yes	37.41	34.47
No	38.58	35.24
Intimacy with roommate		
Casual friend or less	38.45	36.59
Close friend	36.81	34.29

Analysis of the effects of perceived level of intimacy with roommate was conducted on variable level that were, again, the result of combinations. Most subjects considered their roommates to be at least a casual friend. Therefore,

the categories of "stranger," "acquaintance," and "casual friend" were merged to form the category of "casual friend or less." No differences were observed in loneliness scores as a function of perceived level of intimacy with roommate. See Table II for mean loneliness scores, and Table XIV, Appendix B for ANOVA summary table.

Family Experiences

No analyses were conducted in relation to Hypothesis 3 (only children vs. subjects with siblings) or Research Questions 7 (residence after familial disruption) and 8 (visitation by the nonresident parent). Only five of the 199 subjects were only children, most of the subjects who had experienced familial disruption had resided with their mothers, and there were too few children of divorced or separated parents to form adequate cell sizes for analysis of the visitation factor.

Because of the relatively few subjects who had experienced parental separation, divorce, or death, it was necessary to combine those categories before a meaningful analysis could be performed. Consequently, Hypothesis 4 could not be tested as it was stated. The result was a two-factor ANOVA on the individual and combined effects of gender and parents' marital status (married to each other vs. separated, divorced, or widowed) which proved to have no significant findings (see ANOVA summary table in Appendix B, Table XV). The cell means are presented in Table III.

Contrary to prediction (Hypothesis 5), loneliness was not found to correlate significantly with subjects' ages when familial disruption occurred, $r(29) = -.04$, $p > .05$. A significant inverse correlation, $r(6) = -.70$, $p < .05$, was observed between loneliness and age at a parent's death. This result must be viewed with caution, however, because of the extremely small number of subjects involved. No effect was seen for subjects' ages at the time of parental divorce, $r(21) = .26$, $p > .05$.

TABLE III
MEAN LONELINESS SCORES AS A FUNCTION OF GENDER
AND ASPECTS OF SUBJECTS' FAMILY EXPERIENCES

Variable	Sex	
	Males	Females
Parents' Marital Status		
Married to each other	37.04	35.10
Separated, divorced, widowed	40.44	36.47
Birth Order		
First born	34.00	34.00
Middle child	37.74	35.62
Last born	37.25	35.11
Confinement		
Yes	38.18	35.54
No	37.48	35.20

Table III contains the mean loneliness scores for male and female subjects by birth order (Research Question 6) and confinement (Hypothesis 6). No significant main or

interaction effects were found for either variable. The ANOVA summary tables for birth order and confinement may be found in Appendix B, Tables XVI and XVII, respectively.

Research Question 9 inquired as to which remembered experiences regarding the subjects' parents would best predict current loneliness scores. All items on the Developmental Experiences Scale were subjected to stepwise multiple regression analyses at each of the three age periods (grade school, junior high, and high school) for each sex. Table XXVII, Appendix D contains the final regression models. It was found that family items were not highly represented in the models developed for either males or females, with one exception. The deviation from this pattern occurred within the female data at the grade school level. Fifty-six percent of the contributing items referred to subjects' parents, suggesting that family experiences are relatively more important for females at this age period. In comparison, family items comprised only eight percent of the contributing items for the male data at that same period. Table IV presents the specific content of the family items that were included in the regression equations for each sex and age level. In addition, the percentages of the total number of items used is indicated.

Peer Relationships

In the analysis of Research Question 10, a two-factor ANOVA was used to test the effects of subjects' relative

TABLE IV

DES FAMILY ITEMS: CONTENT AND PROPORTIONS OF
ITEMS INCLUDED IN THE REGRESSION MODELS

Males

Grade School (8%)

My parents were too interested in their own activities.*

Junior High (33%)

My parents insisted that I go to church regularly.*

My parents were ashamed of me.

My parents were very strict.

My parents were interested in my activities.*

My parents understood me very well.

I was ashamed of my parents.*

High School (17%)

My parents were interested in my activities.*

Females

Grade School (56%)

My parents were very strict.*

When I was unhappy, my parents tried to comfort me.*

My parents were overly protective.

My parents approved of my friends.

My parents were interested in my activities.*

Junior High (19%)

When I was unhappy, my parents tried to comfort me.*

At least one of my parents ate dinner with me.*

My parents often punished me.*

High School (20%)

At least one of my parents ate dinner with me.*

My parents understood me very well.*

*Inverse relationship with loneliness.

age of puberty (earlier, same time, or later than peers) and gender on current loneliness scores. Although there was no significant main effect for age, the gender main effect was significant. As in the previous identification of gender differences, males were more lonely than females. However, as in the earlier case, this effect is probably due to some subjects' failure to respond to the item and is not characteristic of the sample as a whole. A significant interaction between gender and relative age of puberty was also observed. (See ANOVA summary table in Appendix B, Table XVIII.) Polynomial regression was used to identify trends within each level of the gender factor (see Appendix C, Table XXVI). As may be seen in the pattern of cell means presented in Table V, males who perceived themselves as reaching puberty earlier or later than their peers were more lonely than were those who reached puberty at the same time. This curvilinear function was significant. Although the female mean loneliness scores show an inverse relationship with age of puberty, the regression analysis found no significant trend. Thus, the significant interaction effect between gender and relative age of puberty may be explained by the male data.

No significant main or interaction effects were identified by separate two-factor ANOVA's on gender and either age at first date (Research Question 11) or total number of steady dates (see ANOVA summary tables in Appendix B, Tables XIX and XX, respectively). However, current loneli-

ness was found to be related to subjects' longest period of going steady (see ANOVA summary table in Appendix B, Table XXI). Subjects who had gone steady for nine months or less were significantly more lonely than were those who had gone steady for over nine months. The data for all of the above are located in Table V. In addition, loneliness scores were inversely correlated with high school dating frequency for males, $r(95) = -.32$, $p < .01$. That is, the less frequently male subjects dated in high school, the more likely they were to be currently lonely. No such relationship was observed for females, $r(95) = .10$, $p > .05$.

TABLE V
MEAN LONELINESS SCORES AS A FUNCTION OF SUBJECTS'
GENDER AND HIGH SCHOOL PEER EXPERIENCES

Variable	Sex	
	Males	Females
Relative age of puberty		
Earlier than peers	38.68	36.24
Same time as peers	35.14	35.71
Later than peers	41.83	32.96
Age at first date		
14 or younger	37.86	34.04
15-16	36.90	35.70
17 or older	40.20	35.60
Number of steady dates		
None	38.71	37.07
One	36.65	35.18
Two	37.44	32.63
Three or more	37.94	37.20
Longest period of going steady		
Nine months or less	39.07	36.93
Over nine months	35.41	34.12

The stepwise multiple regression model derived from the Developmental Experiences Scale was inspected for information relating to Research Question 13. It was found that with the one exception previously mentioned, items referring to peers comprised the largest proportion of items within the predictive models for both sexes and at all age periods. These statements contributed from 33% (grade school females) to 67% (high school males) of the total regression equations. The item content and the percentages of the models they represent may be found in Table VI. See Table XXVII, Appendix D for the complete regression models.

School Experiences

Research Question 14 inquired as to the remembered school experiences that would best predict current loneliness. As described in the preceding paragraph, the multiple regression models were inspected for the contribution of items referring to school experiences. On the average, these items represented approximately 20% of the models. One major deviation from this pattern occurred at the high school level for males, for which no school items were found. Item content and percentages of the equations are presented in Table VII.

Indices of Anxiety

Perusal of the regression models derived from the Developmental Experiences Scale yielded extremely few items

TABLE VI

DES PEER ITEMS: CONTENT AND PROPORTIONS OF
ITEMS INCLUDED IN THE REGRESSION MODELS

Males

Grade School (50%)

- I made friends easily.*
- I was jealous of others my age.
- I teased others my age.*
- I had almost daily access to others my own age outside of school.
- I was popular with others my age.*
- I was shy around others my own age.

Junior High (44%)

- I made friends easily.*
- I often had physical fights with others my own age.*
- I was usually the leader in groups my age.
- I worried about being rejected by others my own age.
- I felt inferior to others my age.
- I usually preferred to spend my time alone.*
- I was not accepted by others my age.
- Others in my age group asked me to join in their activities.*

High School (67%)

- I worried about being rejected by others my own age.
 - I made friends easily.*
 - I felt inferior to others my age.
 - Others my age didn't understand me.
-

Females

Grade School (33%)

- I usually preferred to spend my time with adults.
- It was difficult for me to make new friends.
- I was a member of an informal group of friends.*

Junior High (50%)

- I usually preferred to spend my time with persons older than myself.
- I was a member of an informal group of friends.*
- I was liked by members of my own sex.*
- Others my age didn't understand me.
- I worried about being rejected by others my own age.
- I preferred to spend my time with others younger than myself.*
- Others in my age group teased me.*
- I was accepted by others my age.

TABLE VI (Continued)

Females

High School (60%)

I was a member of an informal group of friends.*

It was difficult for me to make new friends.

I preferred to spend my time with others younger than myself.*

Others my age didn't understand me.

I usually preferred to spend my time with persons older than myself.

I made friends easily.*

*inverse relationship with loneliness.

TABLE VII

DES SCHOOL ITEMS: CONTENT AND PROPORTIONS OF
ITEMS INCLUDED IN THE REGRESSION MODELS

Males

Grade School (25%)

When my teachers asked the class a question, I knew
the answer.

I attended school functions (plays, parties, science
fairs, etc.).

I attended school regularly.*

Junior High (22%)

I attended school regularly.*

I was a very serious student.*

I usually completed my school assignments.

I liked school.

High School (0%)

Females

Grade School (11%)

I made very good grades in school.*

Junior High (19%)

When my teachers asked the class a question, I often
volunteered the answer.*

I attended school regularly.*

I skipped school.*

High School (20%)

I disliked school.

When my teachers asked the class a question, I knew
the answer.

*Inverse relationship with loneliness.

referring to psychophysiological indices of anxiety and/or self-perceptions. In half the models (males at the junior high level and females at the grade school and high school levels), items within this category were completely absent. At best, they contributed 17% of the items used to predict current loneliness scores. See Table VIII for item content and percentages at each age period.

TABLE VIII
DES ANXIETY AND SELF-PERCEPTION ITEMS: CONTENT
AND PROPORTIONS OF ITEMS INCLUDED IN
THE REGRESSION MODELS

<hr/> Males <hr/>	
Grade School (17%)	
I blushed easily.*	
My face was usually broken out.	
Junior High (0%)	
High School (17%)	
I had asthma.	
<hr/> Females <hr/>	
Grade School (0%)	
Junior High (13%)	
My face was usually broken out.	
I blushed easily.	
High School (0%)	

*Inverse relationship with loneliness.

Miscellaneous

Several additional analyses were conducted on variables that did not fit within the aforementioned categories. They will be reported here.

A two-factor ANOVA was used to test the effects of gender and the presence or absence of a recent problem on subjects' current loneliness. Significant main effects were observed for both sex and problem. Subjects who had experienced an emotional or interpersonal problem within the last month were more lonely than those who had not. Males were, again, found to be more lonely than were females. The reader is reminded that no gender differences were found in loneliness scores when data from the entire sample were tested. The interaction of gender and problem was not significant. These data are presented in Table IX (the corresponding ANOVA summary table may be found in Table XXII, Appendix B).

TABLE IX
MEAN LONELINESS SCORES AS A FUNCTION OF THE
PRESENCE OR ABSENCE OF A RECENT
PROBLEM AND GENDER

Current Problem	Sex	
	Males	Females
Yes	40.96	35.83
No	36.37	35.00

Subjects responded to two items which asked them to indicate the period of their lives which they considered to be their most and least happy. Two-factor ANOVA's were used to determine whether loneliness systematically varied as a function of gender and which of the time periods (before grade school, grade school, junior high, high school, or after high school) the subject selected. Because of their low selection levels, periods prior to high school were combined to form "junior high or before" for the analysis of subjects' happiest time of life. Similarly, the category of "grade school or before" was created for the analysis of subjects' least happy period. No significant main or interaction effects were observed for any of the factors. These data are in Table X (see ANOVA summary tables in Appendix B, Tables XXIII and XXIV).

TABLE X
MEAN LONELINESS SCORES AS A FUNCTION OF GENDER AND
CHOICE OF HAPPIEST AND LEAST HAPPY PERIOD

Variable	Sex	
	Males	Females
Happiest Time of Life		
Junior high or before	37.58	33.25
High school	38.91	35.65
After high school	33.75	36.30
Least Happy Time of Life		
Grade school or before	37.29	35.18
Junior high	37.85	33.96
High school	40.54	39.28
After high school	36.45	38.00

A final ANOVA was conducted on subjects' ratings of their clarity of memory for each of the three age periods used in the Developmental Experiences Scale (grade school, junior high, and high school). The effects of three variables were examined: gender, loneliness (divided into lonely and not-lonely on the basis of a median split of the loneliness scores), and age period. The age period was a repeated measure. Self-reported clarity of memory was found to significantly increase as a function of the recency of the age period. That is, subjects indicated they remembered their junior high years better than their grade school years, and high school better than junior high. No other main or interaction effects were observed. These data are presented in Table XI (see corresponding ANOVA summary table in Table XXV, Appendix B).

TABLE XI
MEAN RATINGS OF SUBJECTS' CLARITY OF MEMORY
AS A FUNCTION OF PERIOD OF LIFE,
CURRENT LONELINESS, AND GENDER

	Grade School	Junior High	High School
Lonely			
Males	3.16	2.55	1.50
Females	3.41	2.30	1.28
Not Lonely			
Males	2.71	2.24	1.76
Females	3.16	2.25	1.35

The items obtained from the Developmental Experiences Scale that maximally contributed to the prediction of current loneliness scores for each sex and at each age period are presented in Table XXVII, Appendix D. By using the stepwise multiple regression procedure, combinations of items were identified that would account for a large proportion of the variance in loneliness scores. R^2 's ranged from a low of .64 for females at the grade school level and males at the high school level to a high of .86 for males at the junior high level. It would appear that the DES items had their greatest predictive ability at the junior high level. R^2 's of .86 and .85 were observed for males and females, respectively, indicating that only approximately 15% of the variance in current loneliness scores was left unexplained. Further discussion will be reserved for Chapter IV.

CHAPTER IV

DISCUSSION AND SUMMARY

Current Living Arrangements

Hypothesis 1 postulated that subjects' current degree of loneliness would vary as a function of their distance from home. This hypothesis was not supported by the data. Although an inverse linear relationship between these variables had previously been observed (Ferrara, 1979), the findings were from a graduate student population as opposed to the undergraduates sampled here. The possibility that a relationship between loneliness and distance from home does exist within the undergraduate population is not eliminated, however. Because of disproportionate response patterns in the present study, it was necessary to combine the more extreme distances. It may be that an increase in loneliness at the farther distances was masked by this combination.

Research Question 4 inquired as to the effect on loneliness of previous separation from parents. No effect was found. It may be speculated that parents and family, at this stage of an individual's life, are a less important determinant of loneliness than are other factors. The reader is reminded that in the regression models developed

to predict current loneliness scores, items referring to parents contributed only 20% or less of the total items at the high school level, whereas peer items accounted for a much larger percentage. In support of this proposition, Brehm (1979) found no significant difference between the numbers of freshman and sophomore women who considered loneliness to be a problem. It would be expected that the freshman subjects would be less likely to have lived away from their parents before. Similarly, Ross (1979) observed that students who lived in dorms (as did the majority of the subjects in the current study) made more new friends and were less lonely than were students who lived at home.

No relationship between loneliness and perceived intimacy with roommate was found (Research Question 3). It is not known whether one's roommate (often arbitrarily assigned in dorms) does not play a significant part in an individual's social relationships or that the present findings represent an artifact of the study. Because of the necessity of combining levels of the factor, truly superficial levels of relating were not available for analysis.

Family Experiences

Hypothesis 4 posited that parents' marital status would influence subjects' current loneliness. This was not found in the data. However, the present findings may be artifactual because of the combination of subjects whose parents were divorced and those whose parents were deceased.

The literature suggests that parental divorce may have lasting implications for loneliness, whereas parental death may not (Halmos, 1953; Rosenberg, 1965; Shaver & Rubenstein, 1979). Thus, the combination may have canceled out effects of differing types of familial disruption. A significant inverse correlation was observed between loneliness and the ages of subjects when parental death occurred, although no similar findings were seen for divorce (the latter of which would be predicted by the literature). Further investigation of these results, with increased sample size, is needed.

Birth order was observed to be unrelated to current loneliness (Research Question 6). These results are consistent with the literature (Bowlby, 1969; Wood, 1979). Confinement of a month or more was also found to have no lasting effects on loneliness. Consequently, Hypothesis 6 was rejected.

Inspection of the family items that contributed to the regression models used to predict current loneliness identifies several consistent themes that subsume the actual content of the items. On the basis of these data, the response to Research Question 9 would be that loneliness increases in proportion to subjects' perception of their parents as being disinterested, non-nurturing, and emotionally detached. These perceptions are similar to those reported by Brennan and Auslander's (1979) adolescent sample. Hurlock (1964) proposed that overly restrictive or

indulgent parents would negatively affect the child's social adjustment (which would, presumably, encourage loneliness). In the present study, the predictive models included males' perception of their parents as being very strict, with the reverse being true for females.

Peer Relationships

In the response to Research Question 10, it was found that males who perceived themselves as deviating from their peers' typical age of puberty were more lonely than were subjects who did not deviate. This was not true for females, however. Because of the wording of the question, it is not possible to quantify the amount of deviation from the norm, nor can it be ascertained that subjects' perceptions were accurate. It is possible that individuals who view themselves as out of step with others in one area (e.g., social relationships) generalize this perception to other areas as well. Further research is needed to clarify this issue.

Age at subjects' first date (Research Question 11) and total number of steady dates were found to have no impact on current loneliness scores. However, loneliness among males was inversely correlated with high school dating frequency, and those subjects whose longest period of going steady was nine months or less were more lonely than were those who had gone steady for over nine months. The literature indicates that loneliness is associated with lower

dating frequency and dissatisfaction with one's romantic involvements (Brennan & Auslander, 1979; Cutrona & Peplau, 1979; Ferguson, date unavailable; Russell et al., 1979). The implications of the present findings are unclear. It may be that historical data is unimportant in the relationship between loneliness and dating behavior unless the pattern has continued into the present. Unfortunately, the study provided no means of assessing that issue.

In response to Research Question 13, it appears that developmental experiences with peers contribute the largest component to the prediction of current loneliness. As had been found in research on adults (Jones et al., in press; Paloutzian & Ellison, 1979; Solano, 1979), loneliness was associated with social discomfort and perceived nonacceptance. Konopka (1976) has theorized that the sense of belonging to a peer group is an important requisite for healthy development. In the predictive models, items referring to fear of rejection, lack of group involvement, and (among females) the preference for older companions were consistently represented. These themes are consistent with those obtained by Brennan and Auslander (1979) in their study of adolescents.

School Experiences

School experiences ranked third, behind peer and family experiences, in their inclusion in the regression model predicting current loneliness scores. Although the presence

of items indicating an inverse relationship between loneliness and good grades and regular school attendance is consistent with Brennan and Auslander's (1979) findings, other items appear to be somewhat contradictory (e.g., "I liked school" and "When my teachers asked the class a question, I knew the answer."). The inquiry into school experiences is somewhat complicated by the fact that it is not a "pure" category. That is, while some items included under this heading would seem to be more truly academic (e.g., "I made very good grades in school."), others overlap the social realm (e.g., "I attended school functions."). Even in indicating whether they liked or disliked school, it is impossible to evaluate how much subjects were responding to the educational process itself versus the social milieu into which they were placed. In assessing the items included in the predictive model, elements of both seem to be present.

Indices of Anxiety

The only two items within this category that appeared in the regression equations for both males and females referred to facial blemishes and blushing (the latter positively related to loneliness for females and negatively related for males). As a class, these items provided very little input into the explanation of loneliness variance. Indeed, the literature (Novello, cited in Brenton, 1975; Paloutzian & Ellison, 1979; Shaver & Rubenstein, 1979) shows little consistency with regard to this area.

Miscellaneous

A significant difference in loneliness was observed for subjects who had recently experienced a personal or interpersonal problem as compared with those who had not. It seems intuitively reasonable that loneliness would intensify during times of stress. However, this finding raises additional questions. For instance, subjects were not asked to identify the nature of their problem or its perceived severity. Therefore, is loneliness the result? Or do some subjects maintain a trait-like condition of loneliness that results in their differentially classifying as "problems" some situations that not-lonely individuals would not? These questions remain to be answered.

Current loneliness was found to be unrelated to the age periods that subjects considered to be their most or least happy. This would suggest that there is no critical age, at least within subjects' awareness, that predisposes an individual to loneliness in young adulthood. The failure to find an interaction between loneliness and subjects' clarity of memory for the various school years would also imply that lonely and not-lonely subjects do not differentially block or vividly recall these time periods. The appearance of a significant main effect for time periods on memory clarity suggests that the results obtained from the stepwise multiple regressions may be progressively more valid as the period for which subjects responded approaches their current status. That is, the predictors in the high

school models may be more representative of those that would be found for an actual high school sample than would the predictors identified at the junior high and grade school levels if students in those grades were questioned. However, regardless of the period in question, mean confidence ratings were consistently above the median of the rating scale.

The regression models derived from the Developmental Experiences Scale demonstrated relatively high ability to explain the variance in current loneliness scores. The junior high equations were the most thorough, accounting for 86% and 85% of the male and female data, respectively. At this level, family items represented 33% and 19% of the models, peer items 44% and 50%, school items 22% and 19%, and indices of anxiety 0% and 13%. At no age period for either sex was the ability to predict current loneliness less than 64%. With the exception of females' responses at the grade school level for which family-related items were predominant, items referring to peers were the most highly represented. This would underscore their importance in the development and maintenance of loneliness. In contrast, the category dealing with indices of anxiety contributed very little to any of the models. In a massive factor analytic study of interview and survey data, Brennan and Auslander (1979) reported that family, peers, and school were the major areas of isolation for lonely adolescents. The present study supports their findings and generalizes

them to earlier ages. In the regression equations developed for each of the three age periods, the proportion of the models that was determined by these three categories in combination ranged from 83% to 100%. It must be remembered that these data are retrospective in nature and that subjects' confidence ratings declined as they were asked to recall progressively earlier periods. However, the similarity between these findings and previous research lends support for the credibility of the present study.

Summary

This project represents a diversified exploratory effort to further illuminate the antecedents of loneliness in young adults. Because of limitations imposed by the obtained sample and design of the study which have been discussed in the preceding sections of this chapter, a number of the original questions remain unanswered and new questions have been raised. Additional research is needed to address these issues.

In general, the findings suggest that peers, family, and school (in that order) are highly influential in the prediction of current loneliness and that their impact is felt at a rather early point in life. If the validity of the retrospective data is accepted, subjects who are presently lonely have long experienced feelings of estrangement, nonacceptance, and interpersonal frustration. Whether these perceptions are accurate or distorted evaluations of

objective reality is unimportant in regard to the impact on the individual. It is the phenomenological world in which the person lives. Perhaps a greater issue is the accuracy with which these individuals remember the past. As was previously discussed, current affective states may differentially influence memory for prior events and experiences. Thus, it would be highly informative to apply the findings of the present study to research on samples at the actual ages the present subjects were asked to recall.

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APPENDIXES

APPENDIX A

SURVEY MATERIALS

Instructions

The inventory you are about to complete was designed to answer some important questions about people's feelings and experiences. Although some of the questions are quite personal, this is not an attempt to pry into your particular life and feelings. Instead, data will be grouped in order to determine facts about people in general. You should be aware of the following safeguards that protect your participation:

1. Your responses will remain anonymous.
 - a. Neither your name nor any other form of personal identification will appear on any of the forms. Once you have turned in the inventory, there will be no way to trace the information back to you.
 - b. These materials will be seen only by a Ph.D. psychologist, a psychology graduate student, and an undergraduate assistant. The American Psychological Association specifically prohibits the misuse of personal information.
2. Your participation is voluntary.
 - a. You will not be penalized in any way for refusing to participate.
 - b. Although we would like you to answer all questions, you may omit any item that you would prefer not to answer.
3. Please answer each item as directly and honestly as possible. We would prefer that you not answer a question rather than to have you answer it dishonestly. Also, please respond to the items in order and without regard to how others around you may be responding.
4. If you wish to be informed of the specific results of this study, please leave your name and address with your instructor and I will be happy to provide you with that information once the data have been analyzed (by the end of the semester).

Thank you for your participation.

RLS

INSTRUCTIONS: Indicate how often each of the following statements describes you. Circle one number for each.

NEVER RARELY SOMETIMES OFTEN

- | | | | | |
|--|---|---|---|---|
| 1. I feel in tune with the people around me..... | 1 | 2 | 3 | 4 |
| 2. I lack companionship..... | 1 | 2 | 3 | 4 |
| 3. There is no one I can turn to..... | 1 | 2 | 3 | 4 |
| 4. I do not feel alone..... | 1 | 2 | 3 | 4 |
| 5. I feel part of a group of friends..... | 1 | 2 | 3 | 4 |
| 6. I have a lot in common with the people around me..... | 1 | 2 | 3 | 4 |
| 7. I am no longer close to anyone..... | 1 | 2 | 3 | 4 |
| 8. My interests and ideas are not shared by those around me..... | 1 | 2 | 3 | 4 |
| 9. I am an outgoing person..... | 1 | 2 | 3 | 4 |
| 10. There are people I feel close to..... | 1 | 2 | 3 | 4 |
| 11. I feel left out..... | 1 | 2 | 3 | 4 |
| 12. My social relationships are superficial..... | 1 | 2 | 3 | 4 |
| 13. No one really knows me well. | 1 | 2 | 3 | 4 |
| 14. I feel isolated from others. | 1 | 2 | 3 | 4 |
| 15. I can find companionship when I want it..... | 1 | 2 | 3 | 4 |
| 16. There are people who really understand me..... | 1 | 2 | 3 | 4 |
| 17. I am unhappy being so withdrawn..... | 1 | 2 | 3 | 4 |
| 18. People are around me but not with me..... | 1 | 2 | 3 | 4 |
| 19. There are people I can talk to..... | 1 | 2 | 3 | 4 |
| 20. There are people I can turn to..... | 1 | 2 | 3 | 4 |

Personal Data Questionnaire

Instructions: Please circle one response for each of the following items. (A few items will require you to fill in a blank.)

1. Sex:
 1. male
 2. female
2. Age: _____
3. Race:
 1. Euro-American (white)
 2. Afro-American
 3. Hispanic-American
 4. Native American
 5. Asian-American
 6. Other (specify) _____
4. Are you a U.S. citizen?
 1. yes
 2. no
5. Marital Status:
 1. single (never married)
 2. married
 3. separated
 4. divorced
 5. widowed
6. How many brothers and sisters do you have? (Include step-brothers and sisters if they have lived with you on a permanent basis for ten years or more)
number of brothers _____ their age(s) _____
number of sisters _____ their age(s) _____
7. Are your parents:
 1. married to each other
 2. separated
 3. divorced
 4. one parent remarried
 5. both parents remarried
 6. one parent dead
 7. both parents dead
8. If your parents are separated, divorced, or widowed, how old were you when this occurred? _____
9. If your parents are separated, divorced, or widowed, with whom did you live for the greatest period of time after this occurred?
 1. mother
 2. father
 3. grandparents
 4. other relatives
 5. foster care
 6. other (specify) _____
10. If parents are divorced or separated, how often do you see the parent you do not live with?
 1. never
 2. once a year or less
 3. 2-6 times a year
 4. 7-12 times a year
 5. more than once a month

11. How far is Stillwater from your home town?
1. 0-50 miles
 2. 50-100 miles
 3. 100-250 miles
 4. 250-500 miles
 5. over 500 miles
12. Where do you live while attending school?
1. sorority or fraternity house
 2. residence hall
 3. apartment
 4. house or trailer
 5. other (specify) _____
13. With whom do you live while going to school?
1. husband or wife
 2. parents
 3. other relative(s) (not parents)
relationship to you _____
 4. more than one roommate (not a relative)
 5. opposite sex roommate (not a relative)
 6. same sex roommate (not a relative)
 7. alone
14. If you answered 3-6 on item 13, how would you describe the person you live with? (If you live with more than one other person, describe the person with whom you have the closest relationship)
1. stranger (almost never interact, nothing in common)
 2. acquaintance (superficial relationship, little in common)
 3. casual friend (some interests and activities in common)
 4. close friend (share feelings, a lot in common)
 5. lover
15. If you answered 3-7 on item 13, have you ever lived away from your parents for more than two months at a time before this year?
1. yes
 2. no
16. Do you have a pet that lives with you while you are in school?
1. yes
 2. no
17. If you answered yes to item 16, what kind of pet(s) do you have?
- _____
18. Have you ever been confined (through illness, accident, surgery, etc.) for a month or more?
1. yes
 2. no
19. If you answered yes to item 14, at what age(s) did this occur?
- _____

20. Did you reach puberty:
1. much earlier than others your age.
 2. a little earlier than others your age.
 3. about the same time as others your age.
 4. a little later than others your age.
 5. a lot later than others your age.
21. When did you have your first date? (use your own definition of "date")
1. before age 12
 2. 13-14 years old
 3. 15-16 years old
 4. 17-18 years old
 5. have never had a date
22. In high school, how often did you date?
1. three times per week or more
 2. once or twice a week
 3. two or three times a month
 4. every month or two
 5. three or four times per year
 6. two times a year or less
23. How many times have you dated one person steadily for two months or more?
1. never
 2. once
 3. twice
 4. three times
 5. four times
 6. five or more
24. What is the longest period of time you have dated one person exclusively?
-
25. Have you had an emotional or interpersonal problem (i.e., losing a friend, break-up with boyfriend or girlfriend) within the last month?
1. yes
 2. no
26. If you answered "yes" to number 25, how do you feel right now?
1. much worse than usual
 2. somewhat worse than usual
 3. about the same as usual
 4. somewhat better than usual
 5. much better than usual

Instructions: Please circle one response for each of the following items.

1. How clear is the memory of your life from 1st through 6th grade?
extremely clear 1 2 3 4 5 6 7 extremely unclear
2. How often do you think about your life from 1st through 6th grade?
extremely often 1 2 3 4 5 6 7 almost never
3. How clear is the memory of your life from 7th through 9th grade?
extremely clear 1 2 3 4 5 6 7 extremely unclear
4. How often do you think about your life from 7th through 9th grade?
extremely often 1 2 3 4 5 6 7 almost never
5. How clear is the memory of your life from 10th through 12th grade?
extremely clear 1 2 3 4 5 6 7 extremely unclear
6. How often do you think about your life from 10th through 12th grade?
extremely often 1 2 3 4 5 6 7 almost never
7. What was the happiest (or least unhappy) period in your life?
 1. before 1st grade
 2. grade school
 3. junior high
 4. high school
 5. after high school
8. What was the unhappiest (or least happy) period in your life?
 1. before 1st grade
 2. grade school
 3. junior high
 4. high school
 5. after high school

Developmental Experiences Scale

Instructions: The following items ask you to recall feelings and experiences you may have had earlier in your life. It may not be easy to remember, but do your best to recall what was true then, rather than what is true today. You are to indicate the degree to which each statement was true of you at each of the following stages of your life:

- 1-6 = 1st through 6th grades (approx. 6-12 years old)
- 7-9 = 7th through 9th grades (approx. 13-15 years old)
- 10-12 = 10th through 12th grades (approx. 16-18 years old)

For each statement and each stage of your life, write in the number that best describes how true each item was for you, using the following scale:

- 1 = always or almost always true
- 2 = usually true
- 3 = often true
- 4 = equally true and not true
- 5 = seldom true
- 6 = rarely true
- 7 = never or almost never true

You will write in three numbers for each statement.

For example:

1-6 7-9 10-12

I ate Sunday dinner with my grandparents.

2 4 6

A "2" in the space marked "1-6" indicates that you usually ate Sunday dinner with your grandparents during the time when you were in 1st through 6th grade.

A "4" in the space marked "7-9" indicates that you ate with your grandparents about half the time. This change from "2" to "4" could have occurred because the visits were less frequent. A "4" could also be appropriate if you regularly ate with your grandparents from 7th grade to the middle of the 8th grade when your family moved away from your grandparents.

A "6" in the space marked "10-12" indicates that you rarely ate with your grandparents on Sunday while you were in high school.

Try the following sample item using the 1-7 response format:

1-6 7-9 10-12

I liked to climb trees.

You should have written three numbers.

Do you have any questions? If you do, please ask the experimenter before you begin this questionnaire.

Instructions: Write in the numbers that best describe how true each of the following statements was for you at each period in your life.

- ```

1 = always or almost always true
2 = usually true
3 = often true
4 = equally true and not true
5 = seldom true
6 = rarely true
7 = never or almost never true

```

| Grades |     |       |
|--------|-----|-------|
| 1-6    | 7-9 | 10-12 |
| 1      | 1   | 1     |
| 2      | 2   | 2     |
| 3      | 3   | 3     |
| 4      | 4   | 4     |
| 5      | 5   | 5     |
| 6      | 6   | 6     |
| 7      | 7   | 7     |
| 8      | 8   | 8     |
| 9      | 9   | 9     |
| 10     | 10  | 10    |
| 11     | 11  | 11    |
| 12     | 12  | 12    |

1. Others in my age group asked me to join them in their activities.
2. My parents kissed me goodnight.
3. I worried about being rejected by others my own age.
4. My parents insisted that I go to church regularly.
5. I was an active member of at least one youth group (scouts, 4-H, sports team).
6. I often pretended I was someone else.
7. My parents didn't spend enough time with me.
8. I was usually the leader in groups my age.
9. My feelings were easily hurt.
10. My parents often criticized me.
11. I was elected to class or school offices.
12. I usually preferred to spend my time with others my own age.
13. If my parents took a vacation, they usually took me along.
14. When my teachers asked the class a question, I often volunteered the answer.

[illegible]



15. I usually felt depressed or sad.
16. My parents and I seldom argued.
17. I often pretended I was sick to keep from going to school.
18. I was liked by members of my own sex.
19. I had more problems with my parents than others seemed to.
20. I felt older than others my age.
21. My parents were ashamed of me.
22. I usually completed my school assignments.
23. I invited others my own age to join me in my activities.
24. If I disagreed with one parent, I could usually get the other to stick up for me.
25. I was a slow learner in school.
26. Others my age didn't understand me.
27. When I was unhappy, my parents tried to comfort me.
28. I felt superior to others my age.
29. I was ashamed of my parents.
30. I made very good grades in school.
31. I was liked by members of the opposite sex.
32. I attended school regularly.
33. I was shy around others my own age.
34. My parents were overly protective.
35. I often had rashes.
36. My parents often punished me.







1-6    7-9    10-12

57. My teachers often called on me in class.
58. My parents were interested in my activities.
59. My parents were too interested in their own activities.
60. I attended school functions (plays, parties, science fairs, etc.).
61. I usually preferred to spend my time alone.
62. I had asthma.
63. My parents seldom criticized me.
64. It was difficult for me to make new friends.
65. My parents approved of my friends.
66. I skipped school.
67. I had almost daily access to others my own age outside of school.
68. When my teachers asked the class a question, I knew the answer.
69. I was afraid to meet new people my age.
70. At least one parent was home on weekends.
71. I had nightmares.
72. I preferred to spend my time with others younger than myself.
73. My parents understood me very well.
74. I felt "different" from others my age.
75. I bit my fingernails.
76. I was the class clown.
77. I teased others my age.

[illegible]







### Debriefing

The questionnaire you have just completed was designed to investigate current conditions and past experiences which may be related to the persistent state of loneliness. Of particular interest were factors dealing with family experiences, relationships with peers, school experiences, psychophysiological indices of anxiety, and current living arrangements. The data collected are for research purposes, therefore, all questionnaires will remain confidential. As you will recall, your name does not appear on any part of the questionnaire, so there is no way to trace your responses back to you.

Please do not discuss the questionnaire with your classmates for approximately a week. This will help prevent those who have not yet participated from developing expectations which might influence their responses. If you have any further questions about the study, you may leave your name and number at the addresses listed below or with your instructor and I will contact you. As sometimes occurs, a survey like this may serve as the trigger for intense introspection. If this happens with you and you are distressed by it, there are services available on campus to give you assistance. These are listed below.

Again, thank you for your participation.

#### Experimenter

Ruth Ann Goswick

112 Thatcher Hall  
409 N. Murray Hall

#### Campus Services

Psychological Services Center

624-5974  
N. Murray Hall

Bi-State Mental Health Clinic

624-7007  
OSU Student Hospital



## APPENDIX B

### ANOVA SUMMARY TABLES



TABLE XII  
SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
DISTANCE FROM HOME TOWN AND GENDER

| Source       | SS        | df  | MS    | <u>F</u> | <u>p</u> |
|--------------|-----------|-----|-------|----------|----------|
| Distance (A) | 97.92     | 2   | 48.96 | 0.65     | n.s.     |
| Sex (B)      | 80.02     | 1   | 80.02 | 1.09     | n.s.     |
| A x B        | 143.51    | 2   | 71.76 | 0.95     | n.s.     |
| Error        | 14,524.16 | 193 | 75.25 |          |          |

TABLE XIII  
SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
PREVIOUS SEPARATION FROM PARENTS AND GENDER

| Source         | SS        | df  | MS     | <u>F</u> | <u>p</u> |
|----------------|-----------|-----|--------|----------|----------|
| Separation (A) | 39.97     | 1   | 39.97  | 0.52     | n.s.     |
| Sex (B)        | 418.04    | 1   | 418.04 | 5.40     | .02      |
| A x B          | 1.63      | 1   | 1.63   | 0.02     | n.s.     |
| Error          | 13,780.50 | 178 | 77.42  |          |          |



TABLE XIV  
SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
SUBJECTS' RELATIONSHIP WITH CURRENT  
ROOMMATE AND GENDER

| Source           | SS        | df  | MS     | F    | p    |
|------------------|-----------|-----|--------|------|------|
| Relationship (A) | 176.77    | 1   | 176.77 | 2.35 | n.s. |
| Sex (B)          | 218.36    | 1   | 218.36 | 2.90 | n.s. |
| A x B            | 5.14      | 1   | 5.14   | 0.07 | n.s. |
| Error            | 13,933.82 | 185 | 75.32  |      |      |

TABLE XV  
SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
PARENTS' MARITAL STATUS AND GENDER

| Source     | SS        | df  | MS     | F    | p    |
|------------|-----------|-----|--------|------|------|
| Status (A) | 148.00    | 1   | 148.00 | 1.97 | n.s. |
| Sex (B)    | 227.26    | 1   | 227.26 | 3.03 | n.s. |
| A x B      | 26.84     | 1   | 26.84  | 0.36 | n.s. |
| Error      | 14,259.78 | 190 | 75.05  |      |      |



TABLE XVI  
SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
BIRTH ORDER AND GENDER

| Source          | SS        | df  | MS    | F    | p    |
|-----------------|-----------|-----|-------|------|------|
| Birth Order (A) | 87.69     | 2   | 43.84 | 0.63 | n.s. |
| Sex (B)         | 49.46     | 1   | 49.46 | 0.71 | n.s. |
| A x B           | 16.13     | 1   | 8.06  | 0.12 | n.s. |
| Error           | 12,325.35 | 177 | 69.63 |      |      |

TABLE XVII  
SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
CONFINEMENT AND GENDER

| Source          | SS        | df  | MS     | F    | p    |
|-----------------|-----------|-----|--------|------|------|
| Confinement (A) | 6.35      | 1   | 6.35   | 0.08 | n.s. |
| Sex (B)         | 139.07    | 1   | 139.07 | 1.84 | n.s. |
| A x B           | 0.72      | 1   | 0.72   | 0.01 | n.s. |
| Error           | 14,747.59 | 195 | 75.63  |      |      |



TABLE XVIII

SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
RELATIVE AGE OF PUBERTY AND GENDER

| Source  | SS        | df  | MS     | F    | p    |
|---------|-----------|-----|--------|------|------|
| Age (A) | 194.22    | 2   | 97.11  | 1.36 | n.s. |
| Sex (B) | 518.92    | 1   | 518.92 | 7.28 | .008 |
| A x B   | 755.12    | 2   | 377.56 | 5.29 | .006 |
| Error   | 13,692.26 | 192 | 71.31  |      |      |

TABLE XIX

SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
AGE AT FIRST DATE AND GENDER

| Source  | SS        | df  | MS     | F    | p    |
|---------|-----------|-----|--------|------|------|
| Age (A) | 41.92     | 2   | 20.96  | 0.28 | n.s. |
| Sex (B) | 233.33    | 1   | 233.33 | 3.08 | n.s. |
| A x B   | 89.36     | 2   | 44.68  | 0.59 | n.s. |
| Error   | 14,605.19 | 193 | 75.67  |      |      |



TABLE XX  
SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
SUBJECTS' TOTAL NUMBER OF STEADY  
DATES AND GENDER

| Source       | SS        | df  | MS     | F    | p    |
|--------------|-----------|-----|--------|------|------|
| Steadies (A) | 258.46    | 3   | 86.15  | 1.14 | n.s. |
| Sex (B)      | 207.87    | 1   | 207.87 | 2.74 | n.s. |
| A x B        | 133.87    | 3   | 44.62  | 0.59 | n.s. |
| Error        | 14,018.74 | 185 | 75.78  |      |      |

TABLE XXI  
SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
SUBJECTS' LONGEST PERIOD OF GOING  
STEADY AND GENDER

| Source     | SS        | df  | MS     | F    | p    |
|------------|-----------|-----|--------|------|------|
| Period (A) | 490.29    | 1   | 490.29 | 6.68 | .01  |
| Sex (B)    | 137.99    | 1   | 137.99 | 1.88 | n.s. |
| A x B      | 8.62      | 1   | 8.62   | 0.12 | n.s. |
| Error      | 13,940.06 | 190 | 73.37  |      |      |



TABLE XXII

SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
A RECENT PROBLEM AND GENDER

| Source      | SS        | df  | MS     | F    | p    |
|-------------|-----------|-----|--------|------|------|
| Problem (A) | 291.96    | 1   | 291.96 | 3.97 | .05  |
| Sex (B)     | 419.47    | 1   | 419.47 | 5.70 | .02  |
| A x B       | 140.93    | 1   | 140.93 | 1.92 | n.s. |
| Error       | 14,339.58 | 195 | 73.54  |      |      |

TABLE XXIII

SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
HAPPIEST TIME OF LIFE AND GENDER

| Source   | SS        | df  | MS     | F    | p    |
|----------|-----------|-----|--------|------|------|
| Time (A) | 197.94    | 2   | 98.97  | 1.33 | n.s. |
| Sex (B)  | 93.08     | 1   | 93.08  | 1.25 | n.s. |
| A x B    | 306.31    | 2   | 153.16 | 2.06 | n.s. |
| Error    | 13,804.96 | 186 | 74.22  |      |      |



TABLE XXIV  
SUMMARY TABLE FOR LONELINESS AS A FUNCTION OF  
LEAST HAPPY TIME OF LIFE AND GENDER

| Source   | SS        | df  | MS     | F    | p    |
|----------|-----------|-----|--------|------|------|
| Time (A) | 350.39    | 3   | 116.80 | 1.50 | n.s. |
| Sex (B)  | 68.69     | 1   | 68.69  | 0.88 | n.s. |
| A x B    | 154.43    | 3   | 51.48  | 0.66 | n.s. |
| Error    | 13,250.70 | 170 | 77.94  |      |      |

TABLE XXV  
SUMMARY TABLE FOR CLARITY OF MEMORY FOR THREE  
PERIODS OF SUBJECTS' LIVES AS A FUNCTION  
OF LONELINESS AND GENDER

| Source         | SS     | df  | MS     | F      | p     |
|----------------|--------|-----|--------|--------|-------|
| Between        |        |     |        |        |       |
| Loneliness (A) | 2.31   | 1   | 2.31   | 0.60   | n.s.  |
| Sex (B)        | 0.25   | 1   | 0.25   | 0.06   | n.s.  |
| A x B          | 0.16   | 1   | 0.16   | 0.04   | n.s.  |
| Error          | 731.70 | 190 | 3.85   |        |       |
| Within         |        |     |        |        |       |
| Period (C)     | 267.64 | 2   | 133.87 | 121.19 | .0001 |
| A x C          | 5.17   | 2   | 2.58   | 2.34   | n.s.  |
| B x C          | 9.44   | 2   | 4.72   | 4.28   | n.s.  |
| A x B x C      | 2.80   | 2   | 1.40   | 1.27   | n.s.  |
| Error          | 419.60 | 380 | 1.10   |        |       |



## APPENDIX C

### POLYNOMIAL REGRESSION



TABLE XXVI  
POLYNOMIAL REGRESSION ON RELATIVE  
AGE OF PUBERTY - BY SEX

|           | SS      | df | <u>F</u> | <u>p</u> |
|-----------|---------|----|----------|----------|
| Males     |         |    |          |          |
| Linear    | 131.72  | 1  | 1.64     | n.s.     |
| Quadratic | 633.46  | 1  | 7.89     | .006     |
| Error     | 7550.14 | 94 |          |          |
| Females   |         |    |          |          |
| Linear    | 142.43  | 1  | 2.29     | n.s.     |
| Quadratic | 46.91   | 1  | 0.75     | n.s.     |
| Error     | 5795.28 | 93 |          |          |



## APPENDIX D

### STEPWISE MULTIPLE REGRESSION MODELS



TABLE XXVII  
 PREDICTION OF CURRENT LONELINESS SCORES USING  
 STEPWISE MULTIPLE REGRESSION  
 ON ALL DES ITEMS

| Males        |                                                                    | $R^2$ | p     |
|--------------|--------------------------------------------------------------------|-------|-------|
| Grade School |                                                                    | .80   | .0001 |
| 83.          | I made friends easily.*                                            |       |       |
| 41.          | I was jealous of others my age.                                    |       |       |
| 59.          | My parents were too interested in their own activities.            |       |       |
| 68.          | When my teachers asked the class a question, I knew the answer.    |       |       |
| 60.          | I attended school functions (plays, parties, science fairs, etc.). |       |       |
| 77.          | I teased others my age.*                                           |       |       |
| 32.          | I attended school regularly.*                                      |       |       |
| 91.          | I blushed easily.*                                                 |       |       |
| 67.          | I had almost daily access to others my own age outside of school.  |       |       |
| 86.          | I was popular with others my age.*                                 |       |       |
| 81.          | My face was usually broken out.                                    |       |       |
| 33.          | I was shy around others my own age.                                |       |       |
| Junior High  |                                                                    | .86   | .0001 |
| 32.          | I attended school regularly.*                                      |       |       |
| 83.          | I made friends easily.*                                            |       |       |
| 4.           | My parents insisted that I go to church regularly.*                |       |       |
| 90.          | I was a very serious student.*                                     |       |       |
| 21.          | My parents were ashamed of me.                                     |       |       |
| 37.          | I often had physical fights with others my own age.*               |       |       |
| 8.           | I was usually the leader in groups my age.                         |       |       |
| 22.          | I usually completed my school assignments.                         |       |       |
| 3.           | I worried about being rejected by others my own age.               |       |       |
| 47.          | I felt inferior to others my age.                                  |       |       |
| 85.          | My parents were very strict.                                       |       |       |
| 58.          | My parents were interested in my activities.*                      |       |       |
| 79.          | I liked school.                                                    |       |       |
| 61.          | I usually preferred to spend my time alone.*                       |       |       |
| 97.          | I was not accepted by others my age.                               |       |       |
| 73.          | My parents understood me very well.                                |       |       |
| 29.          | I was ashamed of my parents.*                                      |       |       |
| 1.           | Others in my age group asked me to join in their activities.*      |       |       |



TABLE XXVII (Continued)

| Males        |                                                                               | $R^2$ | p     |
|--------------|-------------------------------------------------------------------------------|-------|-------|
| High School  |                                                                               | .64   | .0001 |
| 3.           | I worried about being rejected by others my own age.                          |       |       |
| 62.          | I had asthma.                                                                 |       |       |
| 83.          | I made friends easily.*                                                       |       |       |
| 47.          | I felt inferior to others my age.                                             |       |       |
| 58.          | My parents were interested in my activities.*                                 |       |       |
| 26.          | Others my age didn't understand me.                                           |       |       |
| Females      |                                                                               | $R^2$ | p     |
| Grade School |                                                                               | .64   | .0001 |
| 50.          | I usually preferred to spend my time with adults.                             |       |       |
| 85.          | My parents were very strict.*                                                 |       |       |
| 30.          | I made very good grades in school.*                                           |       |       |
| 27.          | When I was unhappy, my parents tried to comfort me.*                          |       |       |
| 34.          | My parents were overly protective.                                            |       |       |
| 65.          | My parents approved of my friends.                                            |       |       |
| 58.          | My parents were interested in my activities.*                                 |       |       |
| 64.          | It was difficult for me to make new friends.                                  |       |       |
| 44.          | I was a member of an informal group of friends.*                              |       |       |
| Junior High  |                                                                               | .85   | .0001 |
| 27.          | When I was unhappy, my parents tried to comfort me.*                          |       |       |
| 14.          | When my teachers asked the class a question, I often volunteered the answer.* |       |       |
| 95.          | At least one of my parents ate dinner with me.*                               |       |       |
| 94.          | I usually preferred to spend my time with persons older than myself.          |       |       |
| 44.          | I was a member of an informal group of friends.*                              |       |       |
| 81.          | My face was usually broken out.                                               |       |       |
| 18.          | I was liked by members of my own sex.*                                        |       |       |
| 32.          | I attended school regularly.*                                                 |       |       |
| 26.          | Others my age didn't understand me.                                           |       |       |
| 36.          | My parents often punished me.*                                                |       |       |
| 3.           | I worried about being rejected by others my own age.*                         |       |       |
| 91.          | I blushed easily.                                                             |       |       |
| 66.          | I skipped school.*                                                            |       |       |



TABLE XXVII (Continued)

| Females                                                                  | $R^2$ | $p$   |
|--------------------------------------------------------------------------|-------|-------|
| High School                                                              | .76   | .0001 |
| 72. I preferred to spend my time with others younger than myself.*       |       |       |
| 53. Others in my age group teased me.*                                   |       |       |
| 88. I was accepted by others my age.                                     |       |       |
| 44. I was a member of an informal group of friends.*                     |       |       |
| 64. It was difficult for me to make new friends.                         |       |       |
| 72. I preferred to spend my time with others younger than myself.*       |       |       |
| 95. At least one of my parents ate dinner with me.*                      |       |       |
| 26. Others my age didn't understand me.                                  |       |       |
| 94. I usually preferred to spend my time with persons older than myself. |       |       |
| 73. My parents understood me very well.*                                 |       |       |
| 99. I disliked school.                                                   |       |       |
| 83. I made friends easily.*                                              |       |       |
| 68. When my teachers asked the class a question, I knew the answer.      |       |       |

Note: Items are listed in the order of their contribution to the model.

\*Inverse relationship with loneliness.



## VITA<sup>2</sup>

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