ADOLESCENT LONELINESS: COGNITIVE AND AFFECTIVE CORRELATES

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ABSTRACT

This study examined three issues related to adolescent loneliness. First, it explored the possibility that lonely adolescents overestimate their peers' levels of social engagement. Second, it investigated the roles of personally defined and socially defined social life evaluation standards in mediating adolescent loneliness. Third, it examined the association between these two types of evaluation standards and the emotional responses that accompany the experience of loneliness.

A sample of 218 grade ten students was obtained from an ethnically diverse high school in a metropolitan area of British Columbia. Students ranged in age from 14 to 17 years old. Participants completed three self report instruments: the Social Life Questionnaire, which asks participants to estimate their own actual and ideal levels of social activity and also the typical student's level of social activity across a variety of times and situations; the Revised UCLA Loneliness Inventory, which provides a measure of trait loneliness; and the Loneliness State Emotions Rating Scale, which measures the emotions that accompany loneliness.

Results did not support the hypothesized relationship between adolescent loneliness and distorted perceptions of normative levels of social contact. Rather, they suggested that students in general overestimate the social activity level of

the typical student. The results, however, did indicate that adolescent loneliness was related to both personally defined and socially defined social life evaluation standards. Self perceived discrepancies between actual and ideal levels of social activity and also between actual and normative levels of social activity were both found to be associated with loneliness in this age group. Moreover, the findings suggested that adolescent loneliness was more strongly related to discrepancies from socially defined standards than from self defined standards. This finding was predicted based upon developmental factors associated with this age period. Finally, conflicting findings and methodological problems precluded drawing any conclusions regarding the relationship between the two types of evaluation standards and the emotions that accompany loneliness. The treatment implications of these findings and suggestions for future research are discussed.

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CHAPTER I

COGNITIVE DISCREPANCIES IN ADOLESCENT LONELINESS

The cognitive discrepancy model of loneliness postulates that people experience loneliness when they perceive a discrepancy between their actual and desired levels of interpersonal contact (Perlman & Peplau, 1982). This model further suggests that "desired" levels of social contact are derived from either past experiences (i.e., recalling past levels or kinds of social involvement that proved to be satisfying) or social comparisons (i.e., using others' social lives as a measure of an acceptable level of social contact) (Peplau, Miceli, & Morasch, 1982). Few studies have examined these internal evaluation standards in any detail, however. Consequently, the nature of this social life evaluation standard remains largely unexplored.

Another way of conceptualizing internal standards is in relation to whether they are personally defined or socially defined standards. In other words, these standards may be based upon self defined ideal levels of social contact or upon socially defined normative levels of social contact. Clearly, there is overlap between these two conceptualizations. Standards based upon past experiences represent self defined standards and standards based upon social comparisons represent socially defined standards. However, personally defined ideal levels of social contact do not have to be based upon past experiences

(see Sermat, 1980). For example, an individual may ideally wish to be more socially active despite having never been very socially active in the past. Thus, this reconceptualization includes a standard not captured by the social comparison/past experiences model.

Conceptualizing internal evaluation standards in terms of self defined ideals versus socially defined norms may prove beneficial for several reasons. First, it provides a framework for examining the relative importance of personally and socially defined evaluation standards in mediating loneliness. Second, research in the field of developmental psychology (e.g., Erickson, 1963) suggests that different age groups may place different emphasis upon peer group defined versus self defined evaluation standards when assessing the adequacy of their social lives. This conceptualization suggests a methodology for exploring this hypothesis. Finally, recent research by Higgins (cited in Higgins, Bond, Klien, & Straumann, 1986) implies that evaluations of one's social life based upon these two standards may result in different emotional responses to loneliness. This hypothesis can also be tested by employing this framework.

The purpose of this study is to investigate several aspects of adolescent loneliness using this personally defined/socially defined conceptual framework. In the first section of chapter one the problem and nature of adolescent loneliness are reviewed. Next the cognitive discrepancy model of loneliness is discussed and the existing empirical support for the model is

summarized. Reasons for investigating adolescent loneliness using self-defined and peer group-defined internal standards are then presented. Finally, a review of Weiss's (1973) loneliness typology is presented and a cognitive discrepancy model is proposed for explaining individuals' emotional responses when lonely.

Adolescent Loneliness

Incidence of Adolescent Loneliness

Adolescent loneliness is a widespread and often debilitating problem (Gordon, 1976) and studies indicate that the incidence of loneliness peaks during adolescence (Brennan 1982; Rubenstein and Shaver, 1982). The findings of a large scale survey by Brennan & Auslander (cited in Brennan, 1982) indicate the extent of loneliness in this age group. Drawing from a sample of over 9000 adolescents, the authors found that 54% of those surveyed reported that they "often felt lonely". The authors further concluded that 10% - 15% of this group was "seriously lonely" and an additional 45% were experiencing chronic low level loneliness. Other surveys of adolescents have reported similar findings. For example, Collier and Lawrence (1951) found that 65% of their sample reported feelings of isolation from peers, family members and/or teachers. Ostrov and Offer (1978) obtained similar, though less extreme results. Their findings from a study of over 5000 students between the ages of 12 and 19 indicated that 22% of the males and 20% of the females in the

young adolescent group (between 12 and 16 years old) reported that they felt very lonely.

Correlates of Adolescent Loneliness

The association between adolescent loneliness and various emotional problems is well documented. Loneliness in adolescence has been linked repeatedly to feelings of boredom, interpersonal isolation and low self esteem (Brennan, 1982; Tanner, 1973). Anxiety and depression are also commonly reported by lonely adolescents (Jones, 1982; Moore & Schultz, 1983; Schultz & Moore, 1988). In addition, various researchers have reported that adolescent loneliness is correlated positively with feelings of powerlessness, shyness, public self consciousness, social anxiety, interpersonal cynicism, and mistrust of others (Brennan & Auslander - cited in Rook, 1984; Moore & Schultz, 1983; Zimbardo, 1977), and correlated negatively with self-rated likeability, happiness, life satisfaction, social risk-taking, and satisfaction with one's interpersonal relationships (Cutrona 1982; Moore & Schultz, 1988). Spitzberg & Hurt (1987) have also argued that protracted loneliness may foster changes in attributions that, in turn, predispose individuals to more chronic loneliness. Finally, intense loneliness has been identified as a major contributing factor to adolescent suicides (Sermat, 1980).

Behavioral and physical problems have also been associated with adolescent loneliness. Brennan and Auslander (cited in

Rook, 1984) have reported a tendency in some lonely adolescents toward delinquency and anti-social behavior. Drug and alcohol abuse have also been related to loneliness in this age group (Lorton & Lorton, 1984). Moreover, loneliness in adult populations has been correlated positively with diminished functioning of the immune system (Keicolt-Glasser, Garner, Speicher, Penn, Holliday, & Glasser, 1984) and increased susceptibility to serious illnesses (Lynch, 1977).

Nature of Adolescent Loneliness

Few empirical studies have focussed specifically upon loneliness in adolescence. Findings from this research, however, coupled with the results of two recent studies examining age-related differences in loneliness (Larson - cited in Larson, Csikszentmihalyi, & Graef, 1982; Schultz & Moore, 1988), suggest that adolescent and adult loneliness differ in a number of respects and, further, that these differences may reflect the influence of life span development processes (see Erickson, 1963).

Lifespan development theories postulate that people's lives are marked by a series of developmental tasks that are addressed through the accomplishment of stage-specific tasks (Erickson, 1963). According to Newman and Newman (1976), the task of early adolescence (between puberty and graduating from high school) is to establish a sense of "group identity". This is accomplished through sustaining membership in a group of like peers. The task

of early adulthood, in contrast, is to develop the capacity for intimacy, usually through the development of a romantic relationship and, to a lesser degree, close friendships (Erickson, 1963).

Consistent with these psycho-social tasks, loneliness research indicates that adolescent loneliness is predominantly associated with dissatisfaction with peer group relations (e.g., Goswick & Jones, 1982), while adult loneliness is more strongly related to the absence of an intimate partner (Rubenstein & Shaver, 1982). Reported differences in the emotional experiences that characteristically accompany adolescent and adult loneliness also appear congruent with each age group's developmental task. Loneliness in adolescents is most often associated with feelings of boredom and being "left out of things" (Brennan, 1982). These feelings correspond with Weiss's (1973) "loneliness of social isolation". Adult loneliness, in contrast, tends to be characterized by feelings reflecting desperation and vulnerability (Rubenstein and Shaver, 1982). These feelings, Weiss (1973) suggests, occur in response to the absence of an intimate attachment figure and accompany the "loneliness of emotional isolation".

Observed age related differences in when loneliness occurs are also consistent with a developmental perspective on loneliness. Larson et al., (1982) report that solitary adolescents, but not solitary adults experience pronounced elevations in loneliness on weekend evenings. These weekend

evening "blues", the authors conclude, reflect adolescents' beliefs that "most teenagers are out with friends on Friday and Saturday nights" (p. 48).

Finally, reported age differences in the relationship between loneliness and certain self-rated personal attributes support the value of a lifespan perspective in understanding loneliness. In a recent study based upon the assumptions of social role theory, Schultz and Moore (1988) predicted that as the social demands for peer involvement decrease over the life span, the relationship between loneliness and self rated measures of social competencies, personal adjustment, and certain personality characteristics should also decrease. Their results, for the most part, were consistent with their predictions. Comparing high-school students, college students, and retirees, the authors found that measures of social competence (attractiveness and likeability) and personal adjustment (depression, self-esteem, and life satisfaction) were significantly better predictors of loneliness in high-school students than in either of the two adult groups. In addition, social risk-taking, public and private self-consciousness, and social anxiety were all significantly more highly correlated with loneliness in the high school sample than in the college sample.

In summary, it would appear that adolescent loneliness is mediated to a large extent by peer group issues. In particular, concerns regarding being rejected by one's peers or simply not

being involved in peer activities seem to be highly related to loneliness in this age group.

Cognitive Discrepancy Model of Loneliness

Generally speaking, two theoretical perspectives have dominated loneliness research: a social needs perspective and a cognitive mediation approach. The important distinction between these two approaches is cogently illustrated by Horowitz (1984) when he asks the question: "Is the problem of loneliness a matter of reality or a problem in the head?" (p.4). According to proponents of the social needs perspective (e.g., Fromm-Reichman, 1959; Sullivan, 1953; Weiss, 1973), humans possess inherent needs for social contact and intimacy. When these needs are not met due to the absence or loss of interpersonal relationships, people experience loneliness. Thus, from this perspective, loneliness is a real and predictable response to deficits in relationships.

In contrast, cognitive discrepancy models of loneliness focus on the role of cognitive processes in mediating loneliness. Specifically, these models hypothesize that people's subjective evaluations of their social relations are the dominant mediating factor between actual social deficits and the experience of loneliness (Perlman & Peplau, 1982). Accordingly, proponents of this approach define loneliness "as a response to the perception that one's social relations fail to measure up to

some internal yardstick" (Peplau, Miceli, & Morasch, 1982; pp.137). From this perspective, then, it is the perceived discrepancy between one's actual and desired levels of social engagement that fosters loneliness. Actual levels of social involvement are assumed to foster loneliness only to the extent that they differ from one's internal desired standard. Consequently, actual levels of social contact may bear little relationship to how satisfied people are with their social lives. For example, people may be very active socially yet still feel lonely because their levels of social activity do not meet their desired levels of activity.

Empirical Support for the Cognitive Model

In a recent review of the various perspectives on loneliness, Peplau and Perlman (1982) concluded that cognitive models of loneliness are more conceptually developed and have generated more empirical research than other theoretical approaches. However, Paloutzian and Janigan (1987) argue that "there has....been little research specifically designed to test the [cognitive] model." In particular, they note that the hypothesized linear relationship between the magnitude of cognitive discrepancies and the magnitude of experienced loneliness lacks substantive empirical support.

Two avenues of research do provide indirect support for the cognitive discrepancy model, however. First, the results of a number of studies indicate that loneliness does not covary

directly with measures of social contact. For example, Sermat (1980) obtained written reports from 401 subjects describing their own or close other's experiences of loneliness. A content analysis of these reports revealed that loneliness was not significantly related to individuals' degree of physical isolation from others. In fact, Sermat reported that "if anything, more severe loneliness experiences tended to occur in situations where the individual was not lacking human company" (p. 308). Along similar lines, Jones (1981) had college students monitor their social interactions with fellow students over a four day period. The results of this study indicated that these students' levels of loneliness were not related significantly to the frequency, duration, or self-rated intimacy of their interactions. This and other related research has lead to the theoretical distinction between loneliness and solitude and has fostered the now widely accepted view that loneliness is predominantly a subjectively determined experience (see Perlman & Peplau, 1982; Rook, 1984)

A second avenue of research in support of the cognitive model of loneliness has demonstrated the importance of subjective evaluations of one's social relations in mediating loneliness. In one study, Cutrona and Peplau (cited in Cutrona, 1982) examined the relative importance of satisfaction with one's social relations and several measures of actual social contact (e.g., frequency of contact and number of friends) for predicting loneliness across friendships, dating relationships,

and family relationships. Their findings indicated that, across all three relationship domains, participants' ratings of satisfaction with their relationships were better predictors of loneliness than were any of the social contact measures.

A more recent study by Jones and Moore (1987) has also documented the relationship between loneliness and satisfaction with one's social support network. Using regression procedures to predict loneliness from a number of social support indices, the authors found that satisfaction with one's support network better predicted the loneliness experienced by beginning college students than did any of the measures of social contact obtained. The authors further found that students' initial satisfaction ratings were significant predictors of their levels of loneliness at an 8 week follow up testing. Several other studies (e.g., Cutrona & Peplau, 1979 - cited in Cutrona, 1982; Grubrium, 1974) have also provided empirical support for the importance of subjective evaluations in mediating loneliness.

Evaluation Standards

Considering the mechanism underlying the cognitive discrepancy model of loneliness, the evaluation standards people use when assessing the adequacy of their social relations play a central role in the mediation of loneliness. Generally speaking, the higher these standards are, the greater the probability of perceiving discrepancies between actual and desired levels of

social contact and, thereby, the more prone one should be to feeling lonely. Thus, factors that shape these standards may influence people's predispositions toward experiencing loneliness. Little empirical research has focussed upon this aspect of the model, however. Consequently, little is known about the specific nature of these standards or the factors that influence them.

According to most theorists, these relationship evaluation standards are based upon either past experiences or social comparisons. Thus, people may become lonely if they perceive their present social lives as not measuring up to previous, more satisfying life situations or if they perceive their present social lives as not keeping pace with others' levels of social involvement. A different way of conceptualizing individuals' evaluation standards is in terms of whether they are self defined or socially defined. According to this framework, self-defined standards are standards which reflect the level or type of social contact individuals would ideally wish to have. In other words, they reflect the personally defined interpersonal goals that people aspire toward. Past experience based standards fall into this category. In contrast, socially defined standards are derived from using others' social lives as the standard by which to evaluate the adequacy of one's social life. These standards are thus equivalent to social comparison based standards and, for the most part, reflect people's perceptions of normative levels of social involvement. Moreover,

by virtue of their normative basis, these standards implicitly possess a component of social expectation. Thus, they represent a standard that people may feel somewhat obliged to measure up to.

Self Defined Standards

Psychologists have long recognized that falling short of one's ideal-self standards can foster both negative self evaluations and negative affects (Higgins, Klien, & Strauman, 1985). James (1952), for example, proposed that one's level of self-esteem was a function of the discrepancy between one's actual successes and one's aspirations. Similarly, Rogers (1959) argues that the greater the discrepancy between one's real and ideal selves, the lower one's sense of self worth. Self defined ideal standards of social activity have not specifically been studied, however. Thus, their importance in mediating loneliness is not known.

Research on past experience based evaluation standards provides strong, but indirect support for the relationship between self defined evaluation standards and loneliness. As Peplau et al. (1982) have observed, past experiences lead "us to develop images of the kinds of social interactions and relationships that make us feel satisfied and happy" (p. 136). Clearly these images represent self defined, ideal standards of social contact. Thus, studies documenting the relationship between this type of standard and loneliness appear to

illustrate the importance of ideal social activity levels in mediating loneliness.

A number of studies have provided support for the validity of past experience based standards. Cutrona and Peplau (1979), for example, found that college students who rated their present social and dating relationships as worse than their high school relationships, were more lonely than those who did not. Similarly, Grubrium (1974), studying retirees between the ages of 60 and 94, found that the widowed and divorced retirees were more likely than the single or married retirees to rate themselves as lonely, to rate themselves as more lonely now than they were at age 45, and to rate their present life situations as worse than previous life situations. The results of this and related research (e.g., Lowenthal & Robinson, 1976; Townsend, 1968) has been interpreted as indicating that loneliness can follow from unfavorable comparisons between present and past life situations.

Life span development theories also imply that self defined standards play a prominent role in adults' interpersonal relations. According to these theories, as one moves from adolescence into adulthood, an emphasis upon the peer group and "measuring up" to socially determined standards is replaced by an emphasis upon intimate relationships and realizing personally defined goals (Lorton & Lorton, 1984). Extrapolating from these theories, one would expect to find age related differences in the internal standards that adolescents and adults use to

evaluate their social lives: with adolescents, for the most part, employing socially defined evaluation standards and adults relying predominantly upon self defined standards. But, to date, no research has examined the extent to which either adolescents' or adults' satisfaction with their social lives is based upon self defined internal standards. By examining the relationship between loneliness and discrepancies from an ideal standard of social contact, the importance of ideal standards can be investigated.

Socially Defined Evaluation Standards

The importance of measuring up to socially defined standards is also reflected in a long tradition of psychological writings (see Higgins et al, 1985). Moreover, a recent proliferation of social comparison research has empirically demonstrated the importance of social comparison processes for evaluating one's beliefs and behaviors (for a review see Suls & Miller, 1977).

Correspondingly, research by Cutrona & Peplau (cited in Cutrona, 1982) has provided support for the role of social comparison based standards in mediating loneliness. As part of a study examining the link between loneliness and satisfaction with one's social life, the authors asked college students to rate their relationships against those of their peers. They found that these students' satisfaction with their own relationships was significantly related to how favorably their relationships compared with their peers'. This study, however,

appears to be the only research that has investigated social comparisons in relation to loneliness.

Several writers (e.g., Schultz & Moore, 1988) have suggested that social comparison processes may be of particular importance in the mediation of adolescent loneliness. This assumption is based upon well known developmental changes that occur during the period between late childhood and late adolescence and result in this age group evidencing heightened tendancies toward making social comparisons. For one, the emerging capacity for formal operational reasoning (see Inhelder & Piaget, 1958) results in more sophisticated metacognitive activities and enables adolescents to reflect upon both their own perceptions of others and, more importantly, others' perceptions of them (Seltzer, 1976). Simultaneously, the progressive relinquishing of parents as the primary attachment figures leaves the young adolescent with a diminished social support system (Coleman, 1980) and fosters powerful needs for peer acceptance and the security that accompanies the feeling of belonging (Brennan, 1982). As a result of these developmental changes, people in their early teens become increasingly concerned with their imaginary audiences (i.e., the belief that others are "constantly monitoring their appearance, behavior and actions," Elkind, 1980; pp.435) and measuring up to social expectations (Seltzer, 1976). Thus, it is not surprising that adolescents should also evaluate their social lives according to how their own levels of activity compare with that of their peers'.

Consistent with this social comparison hypothesis, Brennan (1982) has suggested that adolescents who perceive themselves as "not keep[ing] pace with age related expectations.... may feel left out, lonely, or inadequate" (p. 279). In addition, Brennan and others (e.g., Gordon, 1976) have argued that various socializing forces such as one's peers and the mass media often promote erroneous representations of age-related cultural norms. For example, television portrays the typical teenager as having numerous friends and dating partners, and a never ending social life. As a consequence, some adolescents may conclude that the normative levels of social activity are higher than they actually are, and subsequently may feel obliged to measure up to these exaggerated social norms. Invariably, the greater their exaggeration of these social norms, the more likely they would be to not meet these unrealistic goals and thus the greater their predisposition to loneliness.

Research on the effects of heavy television viewing provides indirect support for a 'social norm distortion' hypothesis. This research indicates that individuals who watch large amounts of television are more likely to accept distorted media representations of reality (Gerber & Gross, 1976; Noble, 1975). With respect to loneliness, Cutrona (1982) argues that:

> students' perceptions of peers' relationships may be quite distorted. The lonely students may not be aware of the evenings spent alone by admired peers. Thus,

> one important task may be helping students develop realistic social goals for themselves, based in part on more realistic assessments of the relationships of their peers (p.307).

What is suggested by these writings is that the social life evaluation standards used by adolescents reflect normative, and in most cases, socially expected levels of social activity. Moreover, it also may be that these internal standards are based upon distortions of the actual normative levels of social engagement. Larson et al's (1982) finding that solitary adolescents' loneliness is magnified on weekend evenings as a result of their beliefs that "most teenagers" spend weekend evenings with friends is congruent with these speculations. To date, however, no research has specifically examined the social comparison model of loneliness with adolescents. Similarly, no research has investigated this social norm distortion hypothesis.

In order to investigate the social comparison model, a normative comparison figure for this age group must first be identified; reported discrepancies from this comparison figure could then be examined for their efficacy in predicting adolescent loneliness. According to Festinger's (1954) social comparison theory, people choose similar others as comparison targets when seeking to evaluate the adequacy of their behavior. Thus, a logical target comparison figure for adolescents would

be the "average" or "typical" student in their grade. Consistent with this hypothesis, several researchers (e.g., Tabachnick, Crocker, & Alley, 1983; Valins & Nisbett, 1972) have suggested that people's self evaluations may be based upon consensus information. That is, people may compare their performance to that of a larger group of their peers in order to determine whether their behavior is consistent with the norm (high consensus) or deviates from it (low consensus).

Social comparison theory also presumes that comparison figures are chosen based upon how much relevant information they can provide regarding one's own behavior relative to similar others. Correspondingly, two studies (Suls, Gaes, & Gastorf, 1979; Zanna, Goethals, & Hill, 1975) of college students have indicated that individuals prefer a person of the same sex as a first choice comparison figure when evaluating their abilities on gender influenced tasks. In the case of adolescents evaluating the adequacy of their social behavior, then, the most appropriate comparison figure would seem to be the "typical" same sex student in their grade level. Thus, an internalized image of the typical student of one's age and gender represents a plausible comparison figure for an adolescent population.

Employing this typical student concept, it is possible to investigate the social comparison model of loneliness. Extrapolating from the cognitive discrepancy model of loneliness, adolescents' loneliness should be positively related to the discrepancy between their self rated actual levels of

social contact and their perceptions of the typical student's level of social activity. Furthermore, assuming the social norm distortion hypothesis is correct, loneliness in this age group should also be positively associated with inflated estimates of the typical student level of social engagement.

Dual Discrepancy Model

In summary, at least two distinct social evaluation standards exist: a personally defined "ideal" standard and a socially defined, normative standard. The cognitive model of loneliness thus can be conceptualized as a dual discrepancy model. On the one hand, individuals may experience loneliness if they perceive a discrepancy between their actual and ideal levels of social engagement. On the other hand, they may also experience loneliness if their perceived actual levels of contact are discrepant from their perception of normative levels of social functioning.

To date the loneliness research has not distinguished between these two types of cognitive discrepancies. Thus, their relative importance in mediating loneliness is not known. Moreover, as previously discussed, lifespan theories imply that differences may exist in the relative importance of these two standards for mediating loneliness. Specifically, these theories suggest that the peer group and measuring up to social expectations are very important during early adolescence, but

become progressively less important as one moves into adulthood. Following from this premise, it is reasonable to expect that adolescent loneliness should be highly associated with perceived discrepancies from the socially defined, normative level of social engagement while adult loneliness should be more strongly associated with discrepancies from personally defined ideal levels of social contact. Using the dual discrepancy conceptualization presented here, these issues can be examined. Finally, this dual discrepancy approach also makes possible an investigation of a cognitive discrepancy model of emotion processing. According to this hypothesized model, these two types of cognitive discrepancies should be differentially associated with the depression-related and anxiety-related emotional experiences that are known to accompany loneliness. This model will be discussed now.

Affective Correlates of Loneliness

To date, Weiss's (1973; 1974) 'social provisions' approach to understanding loneliness represents the only theoretical model that explains people's specific emotional responses when lonely. According to this model, different types of relationships meet different social needs through the social provisions they supply. For example, friendships fulfill individuals' needs for 'social connectedness' through providing an arena for social integration. The loss or absence of a particular type of relationship, in contrast, results in

specific needs not being met and triggers feelings of loneliness characterized by emotions specific to different types of interpersonal relationships.

Weiss (1974) identifies six different types of relationships and the social provisions they supply. His loneliness typology, however, includes only two kinds of loneliness: emotional loneliness which arises from deficits in attachment relationships and social loneliness which stems from deficits in social relationships. Deficits in the other four types of relationships he suggests, result in emotional distress, but not loneliness per se.

Emotional loneliness, Weiss (1974) proposes, results from the absence of an attachment relationship. Building upon attachment theory (Bowlby, 1969), he argues that attachment needs extend throughout one's life. Even in adulthood, the presence of an attachment figure promotes feelings of security and well being. Conversely, the loss or absence of an attachment figure fosters feelings of anxiety and apprehension not unlike the separation anxiety experienced by children when separated from their parents. Accordingly, emotional loneliness is characterized by feelings of anxiety, apprehension, emotional isolation, and "a compulsion to locate an intimate other" (Weiss, 1973, p. 89).

Social loneliness, in contrast, results from the the absence of a network of friends and associates. According to Weiss,

people possess social needs which are met only through an active involvement with peers. Friendships and social networks provide the companionship, sense of community, information exchange, and social engagement necessary to fulfill the need for social connection. The absence of a social network precludes the opportunity for social engagement and promotes feelings of social isolation, boredom, and being "left out". Depression is also associated with social loneliness; although, Weiss notes that emotional loneliness is accompanied to varying degrees by "restless depression", as well.

In summary, according to Weiss's model, the social provisions supplied by intimate and social relationships are different. Furthermore, people "need both a social network to provide engagement and an attachment figure to provide security" (Weiss, 1973, p. 148). And finally, the loneliness elicited by the absence of social relationships is expected to be experienced differently from the loneliness elicited by the absence of an attachment relationship.

Empirical Support

Support for Weiss's (1973) theoretical model has been indirectly provided by three recent survey studies. Brennan and Auslander (cited in Brennan, 1982), focussing on adolescents between the ages of 10 and 18, reported that 51% of those surveyed identified boredom as a serious problem, and 54% reported that they often felt 'left out of things'. In a second

study of adolescents, 63% reported feeling bored when lonely, in contrast to 36% reporting anxiety associated with their experience of loneliness (Moore & Schultz, 1983). These findings would be expected given adolescents' presumed pre-occupation with peer relations.

The results of a large newspaper survey conducted by Rubenstein and Shaver (1982) also provided several findings consistent with Weiss's model. For one, a factor analysis of respondents' loneliness related feelings revealed four distinct clusters of emotions thus suggesting the existence of different types of loneliness. Moreover, two of these clusters - comprised of "impatient boredom" related emotions and "desperation" related emotions - were consistent with Weiss's hypothesized social and emotional loneliness. Second, as might be expected in a largely adult population (respondents ranged in age from 18 to 88 years old), the authors found that the desperation cluster accounted for 76% of the common variance. Finally, respondents' 'desperation' factor scores were found to be significantly positively correlated with a separated/divorced status and their 'impatient boredom' factor scores were found to be negatively correlated with age.

A study designed specifically to examine Weiss's typology, however, provides only partial support for this model. Consistent with Weiss's model, Russell, Cutrona, Rose, and Yurko (1984) found that the college students in this study evidenced two distinct types of loneliness: social loneliness and

emotional loneliness. But contrary to expectations, social loneliness was the only significant predictor of anxiety, and feelings of depression, although expected to be more highly associated with social loneliness, were found to be more highly correlated with emotional loneliness.

A Cognitive Discrepancy Model of Affect

Recent research into self concept discrepancies may offer a cognitive model to explain people's specific emotional responses when lonely. Higgins (cited in Higgins et al., 1986) has proposed a theory of self-concept discrepancies that focusses upon actual-ideal and actual-obliged discrepancies. Generally speaking, the theory postulates that people possess an "actual self" concept and two general self guides - the "ideal self" and "ought self" - up to which they are motivated to measure. The ideal self represents the set of attributes that one would ideally like to have. The ought self, in contrast, represents the set of attributes that one feels one ought to possess. The theory further hypothesizes that when our "actual-self" does not measure up to one or the other of our self-guides we become vulnerable to characteristic, discrepancy-specific emotional responses. More specifically, it hypothesizes that actual-ideal discrepancy states will tend to be associated with dejection-related emotional responses and actual/ought discrepancy states with agitation-related emotional responses. The results of two recent studies support these predictions

(Higgins et al., 1986; Higgins et al., 1985).

The conceptual parallels between Higgins' self concept discrepancy model and the dual discrepancy model of loneliness are obvious. On the one hand, one's personally defined, ideal standard of social activity represents a social behavior analogue to the 'ideal self' concept presented in Higgins' model. On the other hand, the socially defined standards that adolescents employ when evaluating their social lives seem, to a large extent, to represent 'ought' standards - i.e., standards reflecting levels of social activity that adolescents feel obliged to measure up to. Thus, extrapolating from Higgins' research, large discrepancies between actual and ideal levels of social activities would be expected to be accompanied by dejection-related feelings, while large discrepancies between actual and normative levels of social activity would be expected to be accompanied by anxiety-related emotions.

To date, no research has investigated this cognitive mechanism for mediating loneliness related emotions. However, in addition to possessing indirect support from Higgins research (Higgins et al., 1985; 1986), this hypothesized model possesses a considerable degree of face validity. To lack the level of social relations that one ideally aspires to would likely foster dissappointment and perhaps even depression; however, there is no particular reason why perceived discrepancies from an ideal level of social relations should result in feeling anxious. In contrast, to not measure up to what one believes the social or

peer-group norm of social activity to be (particularly if peer group acceptance is very important) would, in many instances, likely elicit feelings of social failure (Gordon, 1976). Thus, perceiving one's own level of social involvement to be quite discrepant from the social norm might well be expected to foster feelings of social anxiety.

Results from two of the previously mentioned studies appear compatible with the hypothesized dual discrepancy model of loneliness. For one, Rubenstein and Shaver (1982) found that the first two factors that emerged from their factor analysis of loneliness related emotions were comprised of desperation related and depression related emotions. This result would be predicted by a discrepancy model of loneliness based upon Higgins' self discrepancy theory.

The findings of Russell et al.'s (1984) study of distinct types of loneliness are explainable by the hypothesized dual discrepancy model of loneliness, as well. The measures of social and emotional loneliness employed in this study focussed upon people's self ratings of "belonging" to a social group and upon being involved in an intense, "enduring relationship that provides feelings of affection and security" (pp. 1315), respectively. From the standpoint of self-evaluation, the social loneliness measure appears to possess a considerable social expectation related component. The emotional loneliness measure, in contrast, refers more to the quality of a particular relationship, and thus appears to be primarily personal ideal

based. Correspondingly, anxiety was related to social but not emotional loneliness, while depression was more strongly related to emotional than social loneliness. Thus, a dual discrepancy model interpretation would appear to fit Russell et al.'s findings better than Weiss's social provisions model. In light of these findings, the dual discrepancy model warrants investigation.

Purpose of the Study

The purpose of this study is to investigate the evaluation standards employed by high school students in assessing their social lives and, thereby, to better understand those factors which mediate loneliness in adolescence. Specifically, this study addresses three questions:

1) How important are self-defined and peer group-defined evaluation standards in the mediation of adolescent loneliness?

2) Is adolescent loneliness associated with apparent cognitive distortions of the normative levels of social activity?

3) Do the characteristic emotions experienced by adolescents when they are lonely differ according to whether their loneliness is associated with discrepancies from an ideal versus a normative level of social activity?

Based upon the research reviewed above, three general hypotheses are set forth. First, it is hypothesized that adolescent loneliness will be more strongly associated with

discrepancies from socially defined evaluation standards than from personally defined standards. Second, it is hypothesized that loneliness will be associated with overestimates of the normative levels of social activity. And third, it is hypothesized that the depression that accompanies loneliness will be more strongly associated with discrepancies from ideal evaluation standards and the anxiety that accompanies loneliness will be more strongly associated with discrepancies from socially defined evaluation standards.

In addition, the results of this study may shed some light on the issue of age related differences in loneliness. If, as expected, adolescent loneliness is found to be predominantly associated with discrepancies from socially defined evaluation standards, this finding would be consistent with lifespan theorists and their view that adolescents are highly motivated to measure up to peer-group standards. In contrast, if participants' loneliness is more highly related to discrepancies from self defined evaluation standards, it will suggest that peer-group standards, at least with respect to social relations, are not as important as some developmental theories would suggest.

CHAPTER II

METHOD

Participants

Two hundred and eighteen grade 10 students from a combined junior/senior high school volunteered to participate in this study. Data were collected from 9 of 11 sections of a compulsory guidance course offered during the Spring semester. Two classes did not participate because of scheduling conflicts; one student declined to participate. The final sample accounted for 67% of the total population of grade 10 students in the school.

The sample consists of 116 males, 101 females, and one participant who did not identify gender. Participants ranged in age from 14 to 17 years (M=15.3, SD=.56). The ethnic background of participants was as follows: 115 White, 79 Asian, 9 East Indian, 12 other, and 3 unidentified.

Instruments

Three self-report measures were administered: the Social Life Questionnaire, the Revised UCLA Loneliness Inventory, and the Loneliness State Emotions Rating Scale.

Social Life Questionnaire

The Social Life Questionnaire is a 59-item instrument designed to assess various aspects of adolescents' social lives (see Appendix A). The questionnaire covers four content areas: social friendships, close friendships, dating and romantic relationships, and specific activities (e.g., going to a concert). These content areas were chosen with two considerations in mind. First, a large body of adolescent development and loneliness literature has emphasized the importance of the three types of relationships - social friendships, close friendships, and romantic relationships - during adolescence (e.g., Brennan 1982; Konopka, 1983; Neuman & Neuman, 1976). Thus, items measuring levels of social engagement within each of these three relationship domains were developed. Second, a section on specific activities was included to obtain measures of actual social activities in which students engage. The items in this section were derived primarily from the Self-Reported Behavior Scales (Brown, Clasen, & Eicher, 1986).

The substantive portion of the questionnaire focussed upon estimates of the time students spend engaged in social activities with significant others. Questions of this nature were chosen because of the emphasis adolescents place upon being with their friends. Indeed, one of the most prominant feelings associated with adolescent loneliness is the feeling of being 'left out' (Brennan, 1982). In addition, between one and three questions assessing participants' satisfaction within the

various relationship domains were included at the end of each section.

The social friends and close friends components of the Social Life Questionnaire were divided into sections covering weekday and weekend social contact. This division was necessary to accomodate different weekday and weekend rating scales. Ratings of weekday social contact were based upon a 9 point scale: 1 = every schoolday; 5 = about one schoolday a week; 9 = almost never. Ratings of weekend social contact were based upon a 7 point scale: 1 = every weekend day or evening; 4 = about two or three times a month; 7 = almost never. In both the social friends and close friend segments of the questionnaire, the weekday sections contained five items and the weekend sections contained four items. Thus, the social friends and close friends scales derived from these sections of the questionnaire each contained nine items.

The specific activities section of the questionnaire contained eight items. Ratings of engagement in specific activities were based upon a 9 point scale: 1 = every day; 5 = about once a week; 9 = almost never. The specific activities scale derived from this section of the questionnaire included all eight items.

The romantic relations section of the questionnaire contained 15 items. Owing to the nature of the questions in this section, a single rating scale could not be employed.

Consequently, each item included its own yes/no, multiple choice, or rating scale answer. This question design problem completely compromised the statistical analyses of this section of the questionnaire. Thus, no analysis of this section was undertaken. Consequently, all subsequent discussion of the Social Life Questionnaire will exclude reference to the romantic relations section.

On each of the items dealing with frequency of social engagement, participants were asked to make three estimates: an estimate of their actual level of social contact, an estimate of their desired (i.e., ideal) level of social contact, and an estimate of the 'typical' same sex student's level of social contact. For example, question #1 asks - How often before classes start: a) do you actually get together with friends? b) would you like to get together with friends? and, c) does the typical student get together with friends? This format allowed for perceived actual-ideal and actual-social norm discrepancy scores to be derived for each question.

To clarify how scale and subscale scores were obtained, a shemata is presented in Figure 1. As indicated, the questionnaire was divided into three content areas. Two of the content areas - social friends and close friends - were further divided into separate week and weekend sections; thus, the questionnaire contained five separate sections. From these five sections three scales were derived: one covering each of the three main content areas. In addition, as each item in the

questionnaire contained an actual, ideal, and typical student estimate, the three scales possessed corresponding actual, ideal, and typical subscales. A composite scale (the total questionnaire scale) was also analysed. This scale also possessed actual, ideal, and typical subscales.

In order to analyze the Social Life Questionnaire, all items were first converted to Z-scores to standardize the item scales across the different sections of the questionnaire. This allowed for summation of items both within and across Social Life Questionnaire scales. Actual-ideal discrepancy scores were then derived by subtracting participants' estimates of their actual levels of social contact from their reported ideal levels of social engagement on the corresponding items. Likewise, actual-typical discrepancy scores were derived by subtracting participants' estimates of their actual levels of social contact from their estimates of the typical student's level of social engagement on the corresponding items. Actual-ideal and actual-typical student discrepancy scores for the social friends, close friends, and specific activities scales and also for the whole questionnaire were then calculated and used to predict both loneliness and the emotional responses that accompany loneliness.

SCALE	SECTION	SUBSCALE		
		Actual	Ideal	Typical
Social Friends	Week	5	5	5
	Weekend	4	4	4
Close Friends	Week	5	5	5
	Weekend	4	4	4
Specific Activities		8	8	8
Total Questionnaire		26	26	26

Figure 1: Schematic Representation of the Contents of the Social Life Questionnaire.

Revised UCLA Loneliness Inventory

The Revised UCLA Loneliness Inventory (see Appendix B) is a 20 item unidimensional measure of loneliness (Russell, Peplau, & Cutrona, 1980). Half the items are positively worded and half are negatively worded. Examples of positive and negative items, respectively, are "I feel part of a group of friends" and "I am no longer close to anyone". Participants rate "how often [they] feel the way described in each.....statement". Scoring is based upon a 4 point Likert scale: 1 = never; 2 = rarely; 3 = sometimes; and 4 = often. Negatively worded items were reversed for scoring and the total score was based upon the sum of the 20 items. Thus, scores ranged from 20 to 80, with higher scores indicating more loneliness.

This scale is the most widely used measure of loneliness in the research literature. In addition, it has been used in a number of studies with adolescents (e.g., Schultz & Moore, 1988; Williams, 1983). It possesses high internal consistency: a coefficient alpha of .94 has been found in two separate studies (Russell et al., 1980). A coefficient alpha of .82 has also been found in a study of 12 - 14 year old adolescents (Mahon, 1983). The construct validity of this measure is also reasonably well supported. Loneliness scores have been found to be positively correlated with participants' reports of daytime hours spent alone (r=.41), weekend evenings spent alone (r=.44), and dinners eaten alone (r=.34), and negatively correlated with participants' reports of how many close friends they have

(r=.-44) and how socially active they are with friends (r=.-28) (Russell et al, 1980). In addition, higher scores on this scale have been associated with less dating activity (Russell et al, 1980). Finally, evidence for the discriminant validity of this measure has been provided by the finding that loneliness scores are more highly correlated with a self-labeling index of loneliness than with a number of related mood and personality measures (Russell et al, 1980).

Loneliness State Emotions Rating Scale

The Loneliness State Emotions Rating Scale (see Appendix C) was developed to assess participants' characteristic emotional experiences when lonely. The scale contains 30 negative affect adjectives selected from the Multiple Affect Adjective Check List (Zuckerman & Lubin, 1965) and the Depression Adjective Check List (Lubin, 1967). Embedded within the scale are 10 depression items, 10 anxiety items, and 10 hostility-based, filler items. Participants were instructed to recall a recent occasion when they felt particularly lonely, to focus for two to three minutes on that occasion and the feelings associated with it, and then to rate each adjective according to "how intensely you felt this way on that occasion". Ratings were based upon a 4 point Likert scale: 1 = not at all; 2 = a little; 3 = a moderate amount; and 4 = very much. From the depression and anxiety items, respectively, two summary measures were calculated: an average depression scale item mean and an average anxiety scale item mean. Average item mean scores were employed so as to

provide a scale related, and thus, more meaningful index of participants' loneliness-related affects. These summary scores ranged from one to four.

Procedure

Informed consent was obtained from parents, participants, and school officials prior to beginning the study (see Appendices D & E). In addition, immediately prior to filling out the questionnaires, participants were informed of the general nature of the study and reminded of the voluntary basis of their participation.

Participants were administered an 18 page questionnaire package consisting of the Social Life Questionnaire, followed by the Revised UCLA Loneliness Inventory and the Loneliness State Emotions Rating Scale. The Social Life Questionnaire and the UCLA Loneliness Inventory were presented before the Loneliness State Emotions Rating Scale to avoid the possibility that previous exposure to the Loneliness State Emotions Rating Scale would cue participants to the specific nature of the study.

Questionnaires were administered in school classrooms during regular 50-minute class periods. First, I read an instruction sheet that outlined the nature of the Social Life Questionnaire measure and informed participants that two rating scales would be completed following the Social Life Questionnaire (see Appendix F). The questionnaire packets were then distributed to

participants. After participants had completed the first page - reporting age, sex and ethnic background - I reviewed how they should complete the Social Life Questionnaire and answered any questions. Participants then completed the Social Life Questionnaire questionnaire.

Upon completion of the Social Life Questionnaire, the UCLA Loneliness Inventory was introduced. Participants were told that the statements contained in the loneliness inventory were statements describing how people felt about certain aspects of their social lives. I then read the specific instructions for completing this measure. When all participants had finished the loneliness inventory, the Loneliness State Emotions Rating Scale was introduced and explained. Instructions for completing this measure were then read to participants, after which they took one to two minutes to recall an incident when they felt lonely and to identify the emotions that accompanied the loneliness. Participants then completed the Loneliness State Emotions Rating Scale.

Finally, after all participants had completed the Loneliness State Emotions Rating Scale, a positive mood induction procedure was carried out. Participants were instructed to either recall a past event that had made them feel particularly happy or to imagine a situation that would make them feel very happy. This positive mood induction was included to remove any negative mood states which may have resulted from completing the Loneliness State Emotions Rating Scale or other aspects of the study. The

positive mood induction lasted for 2 minutes. Participants were then debriefed as to the general nature of the study.

CHAPTER III

RESULTS

The results are organized into three general sections. In the first section, the reliabilities of three measures employed in the study are reviewed, classroom and gender effects are examined, and descriptive statistics on the three criterion measures are presented. In the second section, findings from the analyses testing the social norm distortion hypothesis are presented, followed by the results of the analyses examining the relative importance of personally defined and social defined evaluation standards in mediating loneliness and its attendant emotions. In the last section, the findings of a pattern analysis of these data are reviewed. This latter analysis was undertaken as a complement to the discrepancy score analyses.

Problems with the design of the romantic relationships scale questions precluded statistical analysis of this section of the questionnaire. Specifically, the actual, ideal, and typical items in this section were not completely parallel. Consequently, discrepancy scores could not be calculated. In addition, no analyses of the relationship satisfaction items were performed as these measures were not directly related to the research hypotheses. Thus, no results from these two components of the Social Life Questionnaire are reported.

Data Analysis

Conceptually, the statistical analysis that is most consistent with the research questions being considered involves using reported discrepancies from personally defined and socially defined evaluation standards to predict loneliness and its accompanying affects. Accordingly, a set of analyses was performed in which participants' discrepancy scores, derived from the scales of the Social Life Questionnaire, were entered into regression equations predicting loneliness and loneliness related depression and anxiety.

It is well known, however, that difference scores can be quite unreliable (Ferguson, 1981). Specifically, the higher the correlation between the two measures from which the difference scores are derived, the greater the probability that the obtained difference scores will reflect error variance rather than true score variance. Thus, in light of the fact that the actual, ideal, and typical subscales of the questionnaire showed moderately high inter-correlations (see Appendix G) and further, that certain of the discrepancy subscale reliabilities were only marginally acceptable (see Table 2), a pattern analysis of the data was also undertaken.

In this analysis, categorical variables defined by specific patterns of the actual, ideal, and typical social activity estimates were derived and used to predict the criterion variables. In particular, variables representing patterns in

which ideal or typical social activity estimates were significantly higher than the corresponding actual social activity estimates were used as predictors of loneliness and loneliness related anxiety and depression. Thus, this analytic approach allowed for an assessment of the relative importance of actual-ideal and actual-typical discrepancy related patterns in predicting the criterion variables without relying on difference scores and encountering problems associated with such analyses.

Reliabilities

Consistent with previous research, the internal consistency of the UCLA Loneliness Inventory was high (alpha=.89). In addition, all items in the Loneliness State Emotions Rating Scale anxiety subscale correlated at acceptable levels with the total scale, resulting in an alpha of .87. However, two items in the depression subscale - tired and bored - showed low correlations with the other items in the scale (r=.16 & .24, respectively) and were therefore deleted. The internal consistency of the original 10 item depression scale was .86 while that of the resulting 8-item depression scale was .91. Reliabilities of the actual, ideal, and typical subscales of each scale on the Social Life Questionnaire were also high, ranging from .85 to .93. The internal consistency coefficients of these subscales are presented in Table 1.

Reliability estimates for the discrepancy score subscales of the Social Life Questionnaire were derived using the standard formula for estimating the reliability of difference scores:

$$r_{dd} = \frac{r_{xx} + r_{yy} - 2r_{xy}}{2 - 2r_{xy}}$$

(Ferguson, 1981)

As expected, the reliabilities of the discrepancy score scales were lower and more variable, ranging from .43 to .83. These discrepancy score reliabilities are presented in Table 2.

Classroom Differences

In a series of multivariate analyses of variance, all predictor variables (actual, ideal, and typical student estimates) and criterion variables (loneliness, depression, and anxiety scale results) were examined for possible differences across classrooms. No significant main effect for classes was obtained on any of the variables. Results from the analyses of the Social Life Questionnaire scales are as follows: actual subscales, Hotellings $T^2(24,617) = 0.67$, n.s.; ideal subscales, Hotellings $T^2(24,617) = 0.76$, n.s.; typical subscales, Hotellings $T^2(24,617) = 0.62$, n.s. Results from the analysis of the three criterion variables were similarly nonsignificant, Hotellings $T^2(24,611) = 0.70$, n.s.. In light of these results, the classes

TABLE 1

Estimated Reliabilities of the Social Life Questionnaire Subscales

	Subscale		
Scale	Actual	Ideal	Typical
Social friends	.87	.89	.85
Close friends	.89	.89	.87
Specific activities	.91	.90	.89
Total questionnaire	.93	.92	.87

TABLE 2

Estimated Discrepancy Score Reliabilities of the Social Life Questionnaire Scales

	Discrepancy Subscale	
Scale	Actual/Ideal	Actual/Typical
Social friends	.43	.77
Close friends	.58	.81
Specific activities	.54	.82
Total questionnaire	.61	.83

were collapsed for all subsequent analyses.

Gender Differences

To test for possible gender differences in the criterion variables - loneliness, depression, and anxiety - a multivariate analysis of variance was conducted. This analysis revealed a significant gender effect, Hotellings $T^2(3,211)=13.30$, $p<.001$. Subsequent univariate analyses revealed a significant gender effect for loneliness, $F(1,213)=13.25$, $p<.001$, and for depression, $F(1,213)=12.56$, $p<.001$, but not for anxiety, $F(1,213)=3.17$, n.s. Females on average scored higher on loneliness than males. This finding is consistent with previous research (e.g., Russell et al., 1980). Males, in contrast, reported higher scores on the depression scale of the Loneliness State Emotions Rating Scale. In light of these findings, gender effects were controlled in all analyses.

A second analysis examined gender differences across the nine subscales of the Social Life Questionnaire - i.e., social friends: actual, ideal, and typical; close friends: actual, ideal and typical; and, specific activities: actual, ideal, and typical. Again, a main effect for gender was found, Hotellings $T^2(9,207)=3.04$, $p<.01$. However, follow-up univariate analyses revealed significant gender differences on only two of the nine subscales: the social friends:typical, $F(1,215)=4.41$, $p<.05$, and close friends:typical, $F(1,215)=7.87$, $p<.01$, with females

scoring higher than males in both cases. The results of the univariate analyses are presented in Appendix H.

Descriptive Statistics

The mean UCLA loneliness score was 37.93, SD=10.04, N=218. This finding is consistent with other research using adolescent and college samples (Moore & Schultz, 1983; Russell et al., 1980; Schultz & Moore, 1988). The mean loneliness score for the 116 males was 35.57, SD=8.98, and for the 101 females was 40.49, SD=10.53.

Mean item scores for the depression and anxiety subscales of the Loneliness State Emotions Rating Scale were as follows: depression - M=2.36, SD=.80, N=216, and anxiety - M=1.98, SD=.66, N=216. As indicated previously, a significant gender effect was observed on the depression scale, with males reporting a mean score of 2.53, SD=.80, N=116, and females reporting a mean score of 2.16, SD=.75, N=99. Descriptive statistics from the analyses of the loneliness, depression, and anxiety measures are presented in Table 3. It should be noted that, due to missing data, two females were excluded from the analysis of the Loneliness State Emotions Rating Scale.

Table 4 shows the intercorrelations between the three criterion variables. As can be seen from the results, loneliness is significantly correlated with both depression and anxiety; however, in both cases, the correlations are quite small, r=.27

TABLE 3

Means and Standard Deviations of the Loneliness, Depression, and Anxiety Scales

Scale	Males	Females	Combined
UCLA Loneliness Inventory[a]			
M	35.57	40.49	37.93
SD	8.98	10.53	10.04
Depression scale[a]			
M	2.53	2.16	2.36
SD	0.80	0.75	0.80
Anxiety scale			
M	2.06	1.90	1.98
SD	0.65	0.66	0.66

[a] Significant mean difference at $p<.05$.

and .26, respectively. The correlation between depression and anxiety, in contrast, is quite high, r=.69. Correlation matrices containing pattern analysis and discrepancy score analysis predictor variables and criterion variables are presented in Appendices I and J, respectively.

Raw score item means and standard deviations for the five sections of the Social Life Questionnaire - the social and close friends: week and weekend sections and the specific activities section - are presented in Table 5. The social friends and close friends week and weekend activity scores are reported separately owing to the different rating scales used for week and weekend activities. The means indicate that on average the students reported engaging in the weekday activities 3-4 days per week, the weekend activities once per week, and the specific activities between once a week and 2-3 times per month. In all cases, the ideal and typical means indicate a somewhat higher frequency of social activity than the corresponding actual means.

Social Norm Distortion Analyses

It was predicted that loneliness would be positively associated with over-estimates of normative levels of social activity. To calculate levels of social norm distortion, estimates of normative levels of these activities were first required. To derive estimates of the 'true' norms of social

TABLE 4

Intercorrelations of the Loneliness, Depression, and Anxiety Scale Results (n=218)

Scale	UCLA Loneliness Inventory	Depression scale	Anxiety scale
UCLA Loneliness Inventory	1.00	.27+	.26+
Depression scale		1.00	.69+
Anxiety scale			1.00

+ Reaching Bonferoni corrected alpha level (p=.02)

TABLE 5

Social Life Questionnaire Section Means (n=218)

Section	Subscales		
	Actual	Ideal	Typical
Social friends: week			
M	3.19	2.65	2.69
SD	1.50	1.28	0.94
Social friends: weekend			
M	3.16	2.49	2.59
SD	1.60	1.22	0.98
Close friends: week			
M	3.23	2.47	2.50
SD	1.79	1.30	1.13
Close friends: weekend			
M	3.01	2.38	2.47
SD	1.61	1.20	0.94
Specific activities			
M	5.43	4.63	4.62
SD	1.77	1.57	1.23

activities for this age group, within each of the five sections of the questionnaire participants' raw score estimates of their actual social activity levels were summed and section means were calculated. (Scale scores could not be used here owing to the z-score transformation necessitated by the different week and weekend sections of the questionnaire.) These population estimates were then subtracted from participants' estimates of the population average (i.e., the typical student estimates) to obtain measures of their degree of distortion of these social norms.

Although self-reports were the only feasible method of obtaining estimates of normative levels of social activity, these self-report ratings cannot necessarily be assumed to be accurate. It is possible that the participants as a group may have inadvertantly (or intentionally) either over- or under-estimated their own social behavior, resulting in the calculation of inaccurate estimates of normative levels of activity. However, there are several reasons to believe that the participants' estimates were not subject to systematic error. For one, it is generally accepted that people are reasonably accurate raters of their own behavior assuming that they are not motivated to distort their responses and also that the behaviors being rated occurred fairly recently (C. McFarland, personal communication, June 28, 1989). For another, research has indicated that questions about social activities are among the least threatening topics in self-report studies (Bradburn &

Sudman, 1980). Also, considering the anonymous nature of the questionnaire, one would expect participants' concerns regarding identifying themselves as less socially successful than their peers would be minimized. Finally, studies have shown that self report measures of adolescents' criminal misconduct, which one might expect adolescents to misrepresent, are as valid as more objective measures such as court records, if they are anonymous or are unlikely to result in contact with the police (for a brief review, see Brown et al, 1986). Similarly, research has also confirmed the validity of self-reports of alcohol and illicit drug use in late adolescence (Stacy, Widaman, Hays, & DiMatteo, 1985). Therefore, although the limitations of using self-report ratings to define norms of typical social behaviors are recognized, a test of the social norm distortion hypothesis was undertaken.

To test the social norm distortion hypothesis, first, participants' distortion scores on each section of the questionnaire were calculated. This involved subtracting the actual subscale sample means for each section from participants' own typical subscale means on the same sections. These distortion scores were then entered into two-step regression equations predicting participants' loneliness scale scores.

In each analysis, gender was entered first to control for possible gender effects. Thereafter, one of the five section distortion scores was entered. These analyses revealed a significant association between section distortion scores and loneliness on only one of the five sections. Entering the distortion scores from the close friends: weekday section into the regression equation significantly increased the amount of variance in loneliness accounted for by the equation. Moreover, the change in R^2 was very small: equaling approximately 2%. Also, variables in the equation did not remain significant when a Bonferroni corrected alpha was employed.

Observed raw score differences between corresponding actual and typical estimates on the five sections of the Social Life Questionnaire, however, suggested the possible presence of a social norm distortion bias across the entire sample. To test for this effect, a series of dependent t-tests were performed to determine whether the differences between the actual and typical means were significant. Separate analyses were conducted for males and females to facilitate identification of any gender differences in the patterns of results. Using a Bonferonni corrected significance level (p=.005), these analyses revealed significant mean differences on nine of ten analyses. Only on the close friends:weekend subscale for females did the actual-typical difference fail to reach significance, t(100)=2.80, p=006. These results are presented in Table 6.

TABLE 6

t-tests of Actual-Typical Differences across sections of the Social Life Questionnaire

Section	Subscale		
Females (n=101)	Actual	Typical	t
Social friends: week			
M	3.25	2.80	3.03+
SD	1.72	1.04	
Social friends: weekend			
M	3.21	1.65	3.46+
SD	2.70	0.97	
Close friends: week			
M	3.41	2.69	3.55+
SD	2.11	1.32	
Close friends: weekend			
M	3.07	2.64	2.80
SD	1.66	0.90	
Specific activities			
M	5.22	4.49	4.18+
SD	1.96	1.41	

TABLE 6 (continued)

t-tests of Actual-Typical Differences across sections of the Social Life Questionnaire

Section	Subscale		
Males (n=116)	Actual	Typical	t
Social friends: week			
M	3.11	2.59	4.38+
SD	1.28	0.82	
Social friends: weekend			
M	3.10	2.46	4.71+
SD	1.56	0.93	
Close friends: week			
M	3.09	2.34	3.55+
SD	1.45	0.92	
Close friends: weekend			
M	3.08	2.33	5.33+
SD	1.58	0.95	
Specific activities			
M	5.62	4.73	6.23+
SD	1.58	1.05	

+ Reaching Bonferoni corrected significance level ($p<.005$)

Discrepancy Score Analyses

Simple correlations

Zero order correlations between the criterion variables and the actual-ideal and actual-typical discrepancies are presented in Table 7. As indicated in the table, all discrepancy subscale results were significantly correlated with the three criterion variables across all scales of the Social Life Questionnaire. Given the large number of correlations calculated, a Bonferroni corrected alpha level (p=.002) was applied to these results. Using the corrected alpha, all but four of the correlations remained significant. Three of the correlations that no longer reached significance were between the actual-ideal scores on the social friends scale and the results of the three criterion measures. The fourth correlation not remaining significant after the alpha correction was between the actual-typical scores on the specific activities scale and the anxiety measure results.

Regression Analyses of Discrepancy Scores

In order to examine the relative importance of actual-ideal and actual-typical discrepancies in mediating loneliness and the emotions associated with the experience of loneliness, a series of hierarchical multiple regression analyses was performed. In all analyses, sex was entered first to control for gender effects. The results from this step of the analysis are presented in the tables, but, as they are not germane to the study, they are not discussed in the text. Thereafter, the

Table 7

Correlations of Discrepancy Scores With Criterion Variables (n=218)

	Loneliness	Depression	Anxiety
Discrepancy Subscales	r	r	r
Social: actual-ideal	.13*	.13*	.14*
Social: actual-typical	.31+	.25+	.20+
Close: actual-ideal	.25+	.23+	.26+
Close: actual-typical	.29+	.28+	.21+
Spec. Activities: actual-ideal	.24+	.22+	.26+
Spec. Activities: actual-typical	.39+	.19+	.16*
Total: actual-ideal	.23+	.22+	.25+
Total: actual-typical	.43+	.25+	.22+

*p<.05. **p<.01.

+ Reaching Bonferoni corrected alpha level (p=.002)

actual-ideal discrepancy score was entered into the equation followed by the corresponding actual-typical discrepancy score. This process was then repeated in a second regression analysis with the order of entry of steps two and three reversed. The results of these two sets of regression analyses thus allowed for a matched comparison of the predictive power of each discrepancy while controlling for the variance associated with the other discrepancy. Furthermore, as the change in R^2 accounted for by the last predictor variable entered into the equation is equivalent to its squared semipartial correlation with the criterion variable, the results of the last step of the equation provided a measure of variance in the criterion variable uniquely accounted for by that predictor variable. Given the the large number of F-tests calculated, the possibility of Type 1 errors was controlled for by employing Bonferroni corrected alpha levels in all analyses.

The results from the regression analyses predicting loneliness are presented in Table 8. Across all Social Life Questionnaire scales - social friends, close friends, specific activities, and total questionnaire - both actual-ideal and actual-typical discrepancy scores contributed significantly to the prediction of loneliness when entered immediately after gender into the regression equation. Moreover, with the exception of the actual-ideal discrepancies on the social friends scale, all of these results remained significant when a Bonferroni corrected alpha was employed.

When actual-typical discrepancy scores were entered on the second step, the entry of the actual-ideal discrepancies on the third step did not significantly increase the amount of variance accounted for on any of the Social Life Questionnaire scales. In contrast, across all scales, entry of the actual-typical discrepancy scores after the actual-ideal discrepancy scores did produce significant increases in the amount of variance in loneliness accounted for by the equation. These results were significant even at the Bonferroni corrected alpha level ($p=.003$). In addition, with the exception of the close friends scale results, the changes in R^2 associated with actual-typical discrepancies entered after the corresponding actual-ideal discrepancies were quite high, ranging between 10% and 14% . Thus, the actual-typical discrepancies uniquely accounted for between 10% and 14% of the loneliness variance.

It should be noted here, however, that results from the total questionnaire scale should not be given equal weighting with findings from the three scales that make up the Social Life Questionnaire. As this scale is a composite of the social friends, close friends, and specific activities scales, it does not contribute additional independent information to the results. Consequently, when interpreting all subsequent analyses, primary emphasis should be placed upon the results from the three social domain scales.

Parallel regression analyses were conducted to assess the relative power of the two types of discrepancies in predicting

TABLE 8

Hierachical Multiple Regression Analyses for Discrepancy Scores and Loneliness

Step	Variables entered	β	R^2 Change	F
1	Gender	-.24	.06	12.93+
2	Social Friends: actual-ideal	.15	.02	5.46*
3	Social friends: actual-typical	.38	.11	29.44+
1	Gender	-.24	.06	12.93+
2	Social Friends: actual-typical	.37	.14	35.56+
3	Social friends: actual-ideal	-.03	.00	0.20
1	Gender	-.24	.06	12.93+
2	Close friends: actual-ideal	.28	.08	19.70+
3	Close friends: actual-typical	.25	.04	11.55+
1	Gender	-.24	.06	12.39+
2	Close friends: actual-typical	.33	.11	28.11+
3	Close friends: actual-ideal	.15	.01	3.76

TABLE 8 (continued)

Hierachical Multiple Regression Analyses for Discrepancy Scores and Loneliness

Step	Variables entered	β	R^2 Change	F
1	Gender	-.24	.06	12.93+
2	Spec. activities: actual-ideal	.26	.06	15.93+
3	Spec. activities: actual-typical	.38	.10	26.58+
1	Gender	-.24	.06	12.93+
2	Spec. activities: actual-typical	.40	.16	44.36+
3	Spec. activities: actual-ideal	.03	.00	0.23
1	Gender	-.24	.06	12.93+
2	Total questionnaire: actual-ideal	.27	.07	17.06+
3	Total questionnaire: actual-typical	.41	.14	41.31+
1	Gender	-.24	.06	12.93+
2	Total questionnaire: actual-typical	.45	.20	58.63+
3	Total questionnaire: actual-ideal	.10	.01	2.57

*p<.05. **p<.01.

+ Results reaching Bonferoni corrected alpha level (p=.003)

participants' depression and anxiety scores on the Loneliness State Emotions Rating Scale. Results of the regression analyses predicting depression are presented in Table 9. With the exception of actual-ideal discrepancies on the social friends scale, across all scales, both types of discrepancies significantly predicted depression when entered immediately after gender into the regression equation. On the social friends, close friends, and total questionnaire scales, however, only actual-typical discrepancies accounted for additional variance when entered on the third step of the equation. This pattern was reversed on the specific activities scale. In this case, only the actual-ideal discrepancy scores significantly increased the variance accounted for when entered last into the equation. None of these results were significant at the Bonferroni corrected alpha level, however. In addition, the changes in R^2 associated with discrepancies entered last in the equations were noticeably smaller than those observed for loneliness: in this case, ranging between 2% and 4% as opposed to the 10% to 14% of the variance accounted for in the loneliness equations. Thus, these findings are less consistent and robust than those obtained for loneliness.

Results of regression analyses predicting anxiety scores are presented in Table 10. For all scales, both types of discrepancies significantly predicted anxiety when entered on step two of the regression equation. However, an examination of the results from step three of these regression analyses

TABLE 9

Hierachical Multiple Regression Analyses for Discrepancy Scores and Depression

Step	Variables entered	β	R^2 Change	F
1	Gender	.24	.06	12.79+
2	Social Friends: actual-ideal	.12	.01	3.07
3	Social friends: actual-typical	.24	.04	10.41**
1	Gender	.24	.06	12.79+
2	Social Friends: actual-typical	.24	.06	13.68+
3	Social friends: actual-ideal	.00	.00	0.00
1	Gender	.24	.06	12.79+
2	Close friends: actual-ideal	.21	.05	10.78+
3	Close friends: actual-typical	.21	.03	7.44**
1	Gender	.24	.06	12.79+
2	Close friends: actual-typical	.27	.07	16.83+
3	Close friends: actual-ideal	.10	.01	1.67

TABLE 9 (continued)

Hierachical Multiple Regression Analyses for Discrepancy Scores and Depression

Step	Variables entered	β	R^2 Change	F
1	Gender	.24	.06	12.79+
2	Spec. activities: actual-ideal	.21	.05	10.88**
3	Spec. activities: actual-typical	.10	.01	1.55
1	Gender	.24	.06	12.79+
2	Spec. activities: actual-typical	.19	.04	8.41**
3	Spec. activities: actual-ideal	.16	.02	3.93*
1	Gender	.24	.06	12.79+
2	Total questionnaire: actual-ideal	.21	.04	9.86**
3	Total questionnaire: actual-typical	.18	.03	6.78**
1	Gender	.24	.06	12.79+
2	Total questionnaire: actual-typical	.24	.06	13.15+
3	Total questionnaire: actual-ideal	.13	.01	3.59

*p<.05. **p<.01.

+ Reaching Bonferoni corrected alpha level (p=.003)

revealed that for the close friends, specific activities, and total questionnaire scales, only actual-ideal discrepancies accounted for additional variance when entered last. Conversely, on the social friends scale, only the actual-typical discrepancy scores added additional variance on the last step of the equation. Moreover, as with the depression scale results, none of the step three results remained significant when the corrected alpha was employed. Similarly, the patterns of results varied across the different scales of the Social Life Questionnaire and the changes in R^2 associated with the last discrepancy score entered in the regression equation were again small, ranging between 2% and 4%. Thus, these results, like the depression scale results, are not as clear as the findings pertaining to loneliness. Moreover, as with the depression scale results, the predictor variables account for considerably less variance in anxiety than in loneliness.

Pattern Analyses

Data analysis

Considering the low reliabilities of certain discrepancy score scales, a pattern analysis of the Z score transformed data was also undertaken. In order to carry out this analysis, all derivative patterns from the actual, ideal and typical social activity estimates were first identified. Based upon simple permutations, 13 unique actual-ideal-typical patterns are possible: 12 discrepant patterns (where at least two of the

TABLE 10

Hierachical Multiple Regression Analyses for Discrepancy Score and Anxiety

Step	Variables entered	β	R^2 Change	F
1	Gender	.13	.02	3.43*
2	Social Friends: actual-ideal	.15	.02	4.66*
3	Social friends: actual-typical	.18	.02	5.44*
1	Gender	.13	.02	3.43*
2	Social Friends: actual-typical	.21	.04	9.61**
3	Social friends: actual-ideal	.06	.00	0.61
1	Gender	.13	.02	3.43
2	Close friends: actual-ideal	.25	.06	14.45+
3	Close friends: actual-typical	.09	.01	1.42
1	Gender	.13	.02	3.43
2	Close friends: actual-typical	.20	.04	9.27**
3	Close friends: actual-ideal	.20	.03	6.39*

TABLE 10 (continued)

Hierachical Multiple Regression Analyses for Discrepancy Scores and Anxiety

Step	Variables entered	β	R^2 Change	F
1	Gender	.13	.02	3.43
2	Spec. activities: actual-ideal	.26	.07	15.65+
3	Spec. activities: actual-typical	.01	.00	0.01
1	Gender	.13	.02	3.43
2	Spec. activities: actual-typical	.16	.02	5.31*
3	Spec. activities: actual-ideal	.26	.04	10.06**
1	Gender	.13	.02	3.43
2	Total questionnaire: actual-ideal	.26	.06	13.90+
3	Total questionnaire: actual-typical	.13	.01	3.47
1	Gender	.13	.02	3.43
2	Total questionnaire: actual-typical	.21	.04	9.89**
3	Total questionnaire: actual-ideal	.19	.03	7.34**

*p<.05. **p<.01.

+ Reaching Bonferoni corrected alpha level (p=.003)

estimates are unequal - e.g., T>I=A) and a nondiscrepant (A=I=T) pattern. The 12 discrepant patterns were then dummy coded following a procedure which makes possible the multiple regression analysis of nominal data (see Cohen & Cohen, 1975). Specifically, each pattern was represented by a unique dummy variable which could then be entered into regression equations. For example, all cases in which typical estimates were significantly greater than actual estimates which were, in turn, significantly greater than ideal estimates were coded as the first dummy variable: representing a T>A>I pattern. In order to ensure that the three estimates in each pattern were significantly different from one another, the variable coding statements included instructions to ring each estimate in the pattern with 95% confidence bands based upon the standard error of the respective scales. An example of the coding statements used to define the 12 discrepancy patterns are presented in Appendix K and the questionnaire subscale standard error estimates used to derive the confidence bands are presented in Appendix L.

Patterns which captured one or both types of discrepancies were then clustered into one of three groups: an actual-ideal discrepancy group, an actual-typical discrepancy group, and a combined discrepancy group. This latter group included those patterns in which both discrepancies were present. For example, pattern 7 (I=T>A) represents cases in which actual social activity estimates are significantly smaller than both the ideal

and the typical student social activity estimates. A series of hierarchical regression analyses was then undertaken to examine the relative contribution of actual-ideal, actual-typical, and combined discrepancy related patterns for predicting loneliness and loneliness associated anxiety and depression.

Descriptive statistics

The numbers of individuals whose actual-ideal-typical response patterns match the 12 dummy coded patterns are presented in Table 11. As can be seen from the accompanying percentages, approximately 45% of the total sample evidenced discrepant patterns across each of the questionnaire scales.

As shown in Table 12, between 70% and 77% of the sample captured by the 12 patterns are accounted for by one of three patterns: 7, 11, and 12. Furthermore, the ordering of these three patterns is consistent across the four Social Life Questionnaire scales: with the pattern 12 capturing between 35% and 40% of the 'patterned' cases, followed by pattern 11 which accounts for between 17% and 27% of the patterned cases, and then pattern 7, which captures between 11% and 15% of the patterned cases. It is also worth noting that pattern 3 is not exhibited by any participants on any of the scales, pattern 8 is in evidence only on the close friends scale and captures just 2 participants, and pattern 10 captures between 0 and 2 participants on each scale of the Social Life Questionnaire.

TABLE 11

Frequencies of Actual-Ideal-Typical Patterns

Number	Pattern	Scales			
		Social Friends	Close Friends	Specific Activities	Total Questionnaire
1	T>A>I	2	3	2	6
2	T=A>I	5	7	4	9
3	A>T>I	-	-	-	-
4	A>I=T	5	5	4	4
5	A>I>T	3	2	1	3
6	T>I>A	9	6	5	7
7	I=T>A	11	14	14	13
8	I>T>A	-	2	-	-
9	I>A=T	2	3	6	1
10	I>A>T	1	1	-	2
11	T>A=I	25	19	27	18
12	A=I>T	40	34	36	42
Discrepant pattern total		103 (47%)[a]	96 (44%)	99 (45%)	105 (48%)
Pattern 13 A=I=T		115 (53%)	122 (56%)	119 (55%)	113 (52%)
Sample total		218	218	218	218

[a] Percentage of the total number of subjects in the sample.

A - Actual level of social activity estimate.

I - Ideal level of social activity estimate.

T - Typical student level of social activity estimate.

TABLE 12

Relative Percentages of Patterns 7, 11, and 12.

Number	Pattern	Scales			
		Social Friends	Close Friends	Specific Activities	Total Questionnaire
7	I=T>A	11%	15%	14%	13%
11	T>A=I	24%	20%	27%	17%
12	A=I>T	39%	35%	36%	40%
TOTAL		74%	70%	77%	70%

Note. Percentages of the total number of subjects displaying discrepant patterns.

Of particular relevance for this study are those patterns that reflect either actual-ideal or actual-typical discrepancies. Actual-ideal discrepancy related patterns are those patterns in which only the ideal estimates are significantly greater than the corresponding actual estimates. Patterns 9 and 10 are the only two patterns that meet this criterion. Actual-typical discrepancy related patterns, in contrast, are those patterns in which only the typical estimates are significantly greater than the corresponding actual estimates. The two patterns that represent actual-typical discrepancy related patterns are 1 and 11. Frequencies of cases accounted for by these two clusters of patterns are presented in Table 13.

The two patterns that comprise the actual-ideal discrepancy cluster are minimally represented in this sample; across the four scales, they only account for between 3% and 6% of participants showing the 12 patterns. The actual-typical discrepancy related patterns, in contrast, capture between 23% and 29% of the cases evidencing one of the patterns. However, a closer examination of the specific patterns in this cluster reveals that 11 is, in fact, accounting for almost all of the participants captured by this cluster. Thus, of the four patterns represented in these two clusters, only pattern 11 is present to any degree in this sample.

A third set of patterns which may be of importance in predicting loneliness and its associated emotions are those

patterns in which both the ideal and typical social activity estimates are greater than the corresponding actual estimate. This cluster, comprised of patterns 6, 7, and 8, thus represents those patterns in which both types of discrepancies are present. Frequencies of the cases accounted for by this cluster of patterns are also presented in Table 13. Across the four scales, this cluster captures between 19% and 23% of the cases which evidenced discrepant patterns. However, across the close friends, specific activities, and total questionnaire scales, pattern 7 captures approximately twice the number of cases as does 6. Moreover, as previously mentioned, pattern 8 occurs only on the close friends scale and is present in only 2 participants. Thus, with the exception of the social friends scale results, pattern 7 is found in approximately two-thirds of the cases evidencing this cluster.

Regression analyses of pattern clusters

In order to examine the importance of actual-ideal and actual-typical discrepancy related patterns in predicting the criterion variables, a series of hierarchical multiple regressions was conducted using the discrepancy related patterns as predictor variables. In all analyses, an identical four-step, forced entry procedure was employed. First, gender was entered to control for possible gender effects. Next, the cluster of patterns comprised of those patterns that did not represent the discrepancy being examined (i.e., the unrelated patterns cluster) was entered. For analyses examining the predictive

TABLE 13

Frequencies of Discrepancy Related Patterns

Number	Pattern	Scales: Social Friends	Close Friends	Specific Activities	Total Questionnaire
Actual-ideal cluster					
9	I>A=T	2	3	6	1
10	I>A>T	1	1	-	2
Total		3 (3%)[a]	4 (4%)	6 (6%)	3 (3%)
Actual-typical cluster					
1	T>A>I	2	3	2	6
11	T>A=I	25	19	27	18
Total		27 (26%)	22 (23%)	29 (29%)	24 (23%)
Combined discrepancy cluster					
6	T>I>A	9	6	5	7
7	I=T>A	11	14	14	13
8	I>T>A	-	2	-	-
Total		20 (19%)	22 (23%)	19 (19%)	20 (20%)

[a] Percentage of subjects displaying discrepant patterns.

efficacy of actual-ideal discrepancy related patterns, this cluster included patterns 1, 2, 3, 4, 5, 11, and 12, while for analyses examining the predictive efficacy of actual-typical discrepancy related patterns, the cluster encompassed patterns 2, 3, 4, 5, 9, 10, and 12. The results from these first two steps are presented in the tables but are not discussed in the text as they are irrelevant to the specific research questions. On the third step, the cluster of patterns in which both discrepancies are present (patterns 6, 7, 8) was entered. And finally, the cluster of patterns representing the target discrepancy was entered. This four step process thus controlled for gender effects and also for the variance in the criterion variables associated with all patterns other than the target discrepancy patterns prior to entering the target discrepancy patterns, themselves. Consequently, the entry of the target patterns cluster on the final step provided a measure of the variance in the criterion variable that was uniquely associated with those patterns in the target discrepancy cluster. Also, by entering the combined discrepancy cluster on the third step of the equations, a measure was obtained of the variance in the criterion variables accounted for by the combined discrepancy patterns after controlling for the effects of gender and the unrelated patterns.

The results of the regression equations predicting loneliness are presented in Table 14. As indicated in the table, in no case did the actual-ideal discrepancy cluster

significantly add to the regression equation when entered on the last step. The actual-typical cluster, in contrast, did produce significant increases in the amount of variance accounted for on the social friends and the total questionnaire scales. These results, however, did not reach significance when a Bonferroni corrected alpha level (p=.003) was employed. Moreover, this finding was evident on only one of the three social domain scales, and, further, the amount of additional variance explained was in the order of only 4%.

By comparison, an examination of the third step of these equations revealed highly significant findings across all Social Life Questionnaire scales. Moreover, these results remained significant when the corrected alpha was applied. In addition, depending upon the scale being examined, the amount of variance in loneliness accounted for by the entry of the combined discrepancy cluster ranged from 10% to 17%. Thus, this combined cluster effect appears quite robust.

Results of the regression analyses in which depression and anxiety were the criterion variables are presented in Tables 15 and 16, respectively. Findings from the final step of the regression equations predicting depression revealed that in no instance did entry of either target discrepancy cluster result in a significant increase in variance. In the equations predicting anxiety, though, on the close friends and total questionnaire scales entry of the actual-ideal discrepancy cluster did significantly add to the prediction of anxiety

TABLE 14

Hierarchical Multiple Regression Analyses for Pattern Clusters and Loneliness

Social friends: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.059	.059	13.25+
2	Unrelated	.134	.074	3.02**
3	Combined (6, 7)	.263	.129	17.98+
4	Actual-ideal (9, 10)	.277	.014	1.91

Social friends: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.059	.059	13.25+
2	Unrelated	.138	.080	3.20**
3	Combined (6, 7)	.236	.097	13.10+
4	Actual-typical (1, 11)	.277	.041	5.76**

TABLE 14 (continued)

Hierarchical Multiple Regression Analyses for Pattern Clusters and Loneliness

Close friends: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.059	.059	13.25+
2	Unrelated	.107	.049	1.88
3	Combined (6, 7, 8)	.277	.170	16.00+
4	Actual-ideal (9, 10)	.280	.003	0.41

Close friends: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.059	.059	13.25+
2	Unrelated	.113	.054	2.10
3	Combined (6, 7, 8)	.275	.162	15.26+
4	Actual-typical (1, 11)	.280	.005	0.68

TABLE 14 (continued)

Hierarchical Multiple Regression Analyses for Pattern Clusters and Loneliness

Specific activities: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.059	.059	13.24+
2	Unrelated	.129	.070	2.78*
3	Combined (6, 7)	.231	.102	13.58+
4	Actual-ideal (9, 10)	.242	.011	2.48

Specific activities: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.059	.059	13.25+
2	Unrelated	.130	.072	3.43**
3	Combined (6, 7)	.223	.093	12.31+
4	Actual-typical (1, 11)	.242	.018	2.48

TABLE 14 (continued)

Hierarchical Multiple Regression Analyses for Pattern Clusters and Loneliness

Total questionnaire: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.059	.059	13.24+
2	Unrelated	.144	.085	3.42+
3	Combined (6, 7)	.270	.127	17.83+
4	Actual-ideal (9, 10)	.283	.016	2.32

Total questionnaire: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.059	.059	13.25+
2	Unrelated	.139	.081	3.24**
3	Combined (6, 7)	.250	.111	15.18+
4	Actual-typical (1, 11)	.287	.036	5.18**

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

+ Reaching Bonferoni corrected alpha level ($p=.003$)

Note. The unrelated pattern clusters contain all patterns that do not represent the target discrepancy being examined in the respective regression equations.

scores: the additional variance accounted for equaling approximately 4%. These results did not remain significant when the alpha level was corrected, however. Furthermore, this finding was observed on only one of the three social domain scales and was based upon a discrepancy cluster that described only four participants on the close friends scale and three participants on the total questionnaire scale.

Results obtained when the combined discrepancy cluster was entered into equations predicting depression and anxiety scores revealed only one significant finding. In the depression analyses, the combined discrepancy cluster significantly contributed to the prediction of depression on the close friends scale. This finding, however, did not reach the Bonferroni corrected significance level and the change in R^2 was only slightly over 4%.

In summary, the results of the pattern cluster analyses were, for the most part, nonsignificant. Results from the regression equations predicting loneliness revealed that only the combined discrepancy cluster consistently accounted for significant amounts of the variance in loneliness across the Social Life Questionnaire scales. And findings from the analyses of the Loneliness State Emotions Rating Scale depression and anxiety scale scores indicated that, irrespective of scale, neither the target discrepancy clusters nor the combined discrepancy clusters systematically accounted for any substantial amount of variance in the depression or anxiety

TABLE 15

Hierarchical Multiple Regression Analyses for Pattern Clusters and Depression

Social friends: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.056	.056	12.60+
2	Unrelated	.107	.051	1.98
3	Combined (6, 7)	.124	.017	1.97
4	Actual-ideal (9, 10)	.126	.002	0.21

Social friends: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.056	.056	12.60+
2	Unrelated	.103	.047	1.80
3	Combined (6, 7)	.119	.017	1.95
4	Actual-typical (1, 11)	.126	.006	0.48

TABLE 15 (continued)

Hierarchical Multiple Regression Analyses for Pattern Clusters and Depression

Close friends: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.056	.056	12.60+
2	Non-target	.095	.039	1.49
3	Combined (6, 7, 8)	.139	.045	3.52*
4	Actual-ideal (9, 10)	.149	.009	1.10

Close friends: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.056	.056	12.60+
2	Non-target	.103	.048	1.84
3	Combined (6, 7, 8)	.145	.042	3.31**
4	Actual-typical (1, 11)	.149	.004	0.42

TABLE 15 (continued)

Hierarchical Multiple Regression Analyses for Pattern Clusters and Depression

Specific activities: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.056	.056	12.60+
2	Non-target	.075	.019	0.72
3	Combined (6, 7)	.099	.024	2.76
4	Actual-ideal (9, 10)	.101	.002	0.37

Specific activities: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.056	.056	12.60+
2	Non-target	.071	.015	0.67
3	Combined (6, 7)	.094	.023	2.58
4	Actual-typical (1, 11)	.101	.007	0.84

TABLE 15 (continued)

Hierarchical Multiple Regression Analyses for Pattern Clusters and Depression

Total questionnaire: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.056	.056	12.60+
2	Non-target	.129	.073	2.91**
3	Combined (6, 7)	.140	.011	1.35
4	Actual-ideal (9, 10)	.144	.004	0.44

Total questionnaire: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.056	.056	12.60+
2	Non-target	.120	.064	2.52*
3	Combined (6, 7)	.128	.008	0.95
4	Actual-typical (1, 11)	.144	.016	1.94

*p<.05. **p<.01.

+ Reaching Bonferoni corrected alpha level (p=.003)

TABLE 16

Hierarchical Multiple Regression Analyses for Pattern Clusters and Anxiety

Social friends: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.015	.015	3.17
2	Non-target	.038	.023	0.83
3	Combined (6, 7)	.042	.004	0.42
4	Actual-ideal (9, 10)	.046	.005	0.49

Social friends: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.015	.015	3.17
2	Non-target	.037	.022	0.80
3	Combined (6, 7)	.041	.004	0.42
4	Actual-typical (1, 11)	.046	.005	0.56

TABLE 16 (continued)

Hierarchical Multiple Regression Analsyes for Pattern Clusters and Anxiety

Close friends: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.015	.015	3.17
2	Non-target	.029	.014	0.51
3	Combined (6, 7, 8)	.059	.030	2.18
4	Actual-ideal (9, 10)	.100	.041	4.62*

Close friends: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.015	.015	3.17
2	Non-target	.067	.052	1.93
3	Combined (6, 7, 8)	.099	.032	2.43
4	Actual-typical (1, 11)	.100	.001	0.16

TABLE 16 (continued)

Hierarchical Multiple Regression Analyses for Pattern Clusters and Anxiety

Specific activities: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.015	.015	3.17
2	Non-target	.023	.009	0.31
3	Combined (6, 7)	.041	.018	1.93
4	Actual-ideal (9)	.046	.004	0.95

Specific activities: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.015	.015	3.17
2	Non-target	.021	.006	0.25
3	Combined (6, 7)	.036	.016	1.66
4	Actual-typical (1, 11)	.046	.010	1.03

TABLE 16 (continued)

Hierarchical Multiple Regression Analsyes for Pattern Clusters and Anxiety

Total questionnaire: actual-ideal cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.015	.015	3.17
2	Non-target	.060	.045	1.65
3	Combined (6, 7)	.065	.006	0.64
4	Actual-ideal (9, 10)	.100	.035	3.95*

Total questionnaire: actual-typical cluster

Step	Pattern cluster	R^2	R^2 Change	F
1	Gender	.015	.015	3.17
2	Non-target	.084	.069	2.61*
3	Combined (6, 7)	.089	.005	0.54
4	Actual-typical (1, 11)	.101	.012	1.32

*p<.05. **p<.01.

+ Reaching Bonferoni corrected alpha (p=.003)

scores. Furthermore, no result from the analyses of the depression and anxiety scales reached significance when a Bonferroni corrected significance level was applied.

Regression analyses of individual patterns

Although the hypotheses of the study only concerned the relative importance of actual-ideal and actual-typical discrepancies, the pattern analyses also afforded an opportunity to assess the role of individual patterns in predicting loneliness and its attendant emotions. It is possible, for instance, that people with particular patterns of responses - e.g., their typical scores are greater than their ideal scores which are, in turn, greater than their actual scores - are especially at risk for loneliness. This information is not obtainable from analyses of the discrepancy scores per se. The pattern analyses, however, allowed for an exploratory assessment of this aspect of the data.

To assess the relevance of the individual patterns for predicting participants' loneliness, depression and anxiety scale scores, for each scale, all patterns were entered as a block into regression equations predicting each criterion variable. Semipartial correlations between the patterns and the criterion variables were then examined for significance. Squared semipartial correlations were also calculated to obtain estimates of the total variance in the criterion variables uniquely accounted for by each pattern. Considering the number

and exploratory nature of these analyses, only those results reaching Bonferroni corrected alpha levels are reported.

In general, the results from these analyses were nonsignificant. As indicated in Table 17, only pattern 7 consistently exhibited significant semipartial correlations with loneliness across all scales of the Social Life Questionnaire. The portion of variance in loneliness uniquely associated with this pattern ranged between 8% and 11% across the four scales. In addition, on the close friends scale only, pattern 6 evidenced a significant semipartial correlation, accounting for approximately 7% of the variance in loneliness. No other results from the analyses of the loneliness scale scores reached the Bonferroni corrected significance level. Also, no results from the analyses of either the depression or the anxiety scale scores were significant at the corrected significance level. These results are presented in Appendix M and N, respectively. It is notable, however, that all patterns reaching pre-Bonferroni corrected significance levels in the depression and anxiety scale analyses reflected one or both of the targeted discrepancies.

TABLE 17

All-patterns-entered Regression Equations Predicting Loneliness

Code	Pattern	sr	sr^2	t
Social friends scale				
7	I=T>A	.31	.096	5.16+
11	T>A=I	.19	.036	3.17**
6	T>I>A	.16	.026	2.73**
Close friends scale				
7	I=T>A	.28	.078	4.72+
6	T>I>A	.27	.073	4.47+
8	I>T>A	.18	.032	2.98**
2	A=T>I	.15	.023	2.47*

TABLE 17 (continued)

All-patterns-entered Regression Equations

Predicting Loneliness

Specific activities scale

Code	Pattern	sr	sr^2	N	t
D7	I=T>A	.29	.084	214	4.73+
D6	T>I>A	.16	.026	214	2.56*
D12	A=I>T	-.14	.020	214	-2.37*
D11	T>A=I	.13	.017	214	2.01*

Total questionnaire scale

Code	Pattern	sr	sr^2	N	t
D7	I=T>A	.33	.109	214	5.61+
D1	T>A>I	.18	.032	214	3.05**
D6	T>I>A	.15	.023	214	2.55*

*p<.05. **p<.01.

+ Reaching Bonferoni corrected alpha level (p=.001)

CHAPTER IV

DISCUSSION

This study investigated several aspects of adolescent loneliness. First, it provided a partial test of the social norm distortion hypothesis implicit in Brennan's (1982) and others' (e.g., Cutrona, 1982) writings. Second, it examined the relative importance of personally defined and socially defined evaluation standards in mediating adolescent loneliness. Finally, it explored the relative influence of these two types of evaluation standards in determining the emotional experiences that accompany loneliness.

Social Norm Distortion Results

The first question of interest pertained to the nature of socially defined evaluation standards rather than to cognitive discrepancies per se. Based upon Brennan's (1982) writings, it was hypothesized that loneliness in this age group would be positively associated with inflated estimates of normative levels of social engagement. This hypothesis was not supported. Initial analyses indicated that participants' distortion scores predicted loneliness on only one of the five sections of the Social Life Questionnaire, and when a corrected alpha was applied this result no longer remained significant.

Interestingly, the results suggest that the sample as a whole over-estimated normative levels of social activity. As

indicated in Table 6, even when employing a Bonferroni corrected significance level, males' actual and typical estimates differed significantly across all sections of the Social Life Questionnaire, and females' actual and typical estimates differed significantly on four of five sections. Moreover, a post hoc examination of the descriptive statistics for the whole sample revealed that across the various sections of the Social Life Questionnaire between 73% and 85% of the participants over-estimated the normative level of social activity. And, although the possible confound associated with generating estimates of population norms from self report ratings must be borne in mind when reviewing these results, if participants had systematically distorted their actual estimates it would likely be in the direction of exaggerating their reported levels so as to present themselves in a more positive light. This type of systematic bias, however, would decrease rather than increase the probability of finding any significant differences between the estimated population means and individuals' own estimates of the population averages. Furthermore, this type of bias would not influence the correlation between participants' degree of distortion and their reported loneliness should this relationship exist. Thus, concluding that this group of adolescents as a whole evidenced distorted perceptions of the typical student's level of social involvement with peers appears reasonably valid.

Research on the effects and patterns of television viewing may provide an explanation for this finding. A number of studies have demonstrated a link between television viewing and cultural and social stereotypes: heavy viewing has been associated with a greater likelihood of "perceiving television portrayals in entertainment programs as real" (Murray, 1980, p.46; - see also Gerbner & Gross, 1976). In addition, surveys of television viewing habits have consistently found that younger teenagers (between 13 and 17) watch an average of 22 hours of television per week (e.g., Comstock, 1980; Steinberg, 1980). Thus, considering the idealized portrayal of teenage life on television and in other media (e.g., advertizing and motion pictures), one might expect adolescents, in general, to internalize these media exaggerated representations of social relations and, as a consequence, to report erroneously high estimates of normative levels of social activity. Consistent with this hypothesis, 60% of the participants in this study reported watching television almost everyday, and 29% reported watching three or more hours per day. Furthermore, a correlational analysis of typical student subscale scores and time spent watching television revealed significant correlations across all scales of the Social Life Questionnaire. In contrast, correlational analyses of ideal and actual subscale scores with time spent watching television indicated that only one ideal subscale result - from the social friends scale - and no actual subscale results were significantly correlated with television viewing. These results are presented in Appendix O.

The second question of interest pertained to the role of the two evaluation standards in mediating loneliness and its associated affects. To examine the influence of personally and socially defined standards two sets of analyses were performed. The first set of analyses employed actual-ideal and actual-typical discrepancy scores to predict loneliness, depression, and anxiety. The second set of analyses employed a pattern analysis procedure which examined patterns in the three social activity estimates reported. This latter procedure focused upon those patterns that captured the two types of discrepancies.

Discrepancy Score Analysis Findings

Overall, the results of the discrepancy score analyses indicated that both loneliness and the emotions associated with it are related to perceived discrepancies from both types of evaluation standards. As indicated in Table 7, the correlations between the two types of discrepancies and the three dependent measures were robust: 20 of 24 correlations were significant even at a very conservative Bonferroni corrected alpha level.

More germane to this study, however, was the issue of the relative importance of the two evaluation standards in mediating loneliness and loneliness associated emotional states. From the analysis of the loneliness inventory results, it was evident that loneliness was differentially associated with the two types of discrepancies. As shown in Table 8, across all scales of the

Social Life Questionnaire only actual-typical discrepancy scores accounted for significant additional variance in loneliness after the corresponding discrepancy had been controlled for. Moreover, this effect was maintained even after alpha levels were corrected using the Bonferroni procedure. Thus, these analyses indicate that loneliness in this age group is more strongly associated with discrepancies from a socially defined standard than from a personally defined standard.

The relationship between the two types of cognitive discrepancies and individuals' affective responses when lonely was also examined. Based upon the work of Higgins and his colleagues (Higgins et al., 1985, 1986), it was hypothesized that discrepancies from a personally defined ideal standard would be more strongly associated with feeling depressed when lonely while discrepancies from a socially defined standard would be more strongly related to feeling anxious when lonely. These hypotheses were not supported. To the contrary, loneliness related depression tended to be associated more with actual-typical discrepancies, while loneliness related anxiety tended to be associated more with actual-ideal discrepancies.

These results, however, were inconsistent across scales of the Social Life Questionnaire and the amount of variance accounted for in the final step of the regression equations was quite low: in the order of 2% to 4%. Moreover, when Bonferroni corrected alpha levels were applied to the depression and anxiety scale results, in every case discrepancies entered on

the final step of the equations failed to reach significance. Also, as shown in Table 7, even after Bonferroni corrected significance levels were applied to the zero-order correlations between the predictor and dependent variables, across the various scales of the Social Life Questionnaire, both types of discrepancies were consistently correlated with both depression and anxiety. Thus, it appears that these two types of discrepancies are similarly related to both depression and anxiety. Given the moderately high correlation between these two measures, this finding is not surprising.

Pattern Analysis Findings

Results of the pattern analyses of loneliness were not entirely consistent with those of the discrepancy score analyses. As indicated in Table 14, neither the actual-ideal nor actual-typical clusters accounted for significant variance in loneliness after correcting for the number of F tests conducted. In contrast, in the analyses using continuous discrepancy scores both types of discrepancies were found to be significantly related to loneliness.

These two sets of findings may not be as incongruent as they appear, however. According to the grouping procedure used, individuals evidencing either type of discrepancy could fall into one of two groups: the specific target discrepancy group or the combined discrepancy group. But, considering the developmental issues salient during this age period, one might

expect adolescents' personally and socially defined standards to be quite similar. Consequently, extrapolating from the cognitive model, lonely adolescents would be expected to evidence patterns in which both ideal and typical estimates were greater than the actual estimate - in other words, the combined discrepancy patterns. This effect would also be expected given the findings from the discrepancy score analyses indicating that both types of discrepancies are significant predictors of loneliness. Correspondingly, across the scales of the Social Life Questionnaire the combined discrepancy patterns accounted for significant variance in loneliness (ranging from 9% to 17%) even when Bonferroni corrected alpha levels were applied. Thus, the extent to which one or other of the discrepancies is somewhat more important in predicting loneliness would be less likely to be revealed in these analyses as the combined discrepancy patterns would capture most of the variance in loneliness that is associated with these two types of discrepancies.

Results from the pattern analyses predicting the emotions associated with loneliness failed to support the hypothesized dual discrepancy model of affect processing. In fact, none of the relevant clusters of patterns were significant predictors of depression or anxiety once Bonferroni corrected alpha's were applied. Thus, neither these analyses nor the analyses using discrepancy scores suggest that personally defined and socially defined standards are differentially important in mediating the emotions that accompany loneliness.

The pattern analyses also afforded an opportunity for an exploration of the patterns themselves. Of primary consideration in this analysis was the speculation that the relationship among all three estimates might be of importance in mediating loneliness and its associated emotions. In the analysis of the loneliness results, although a number of patterns reached pre-corrected significance levels, only the pattern in which the ideal and typical were equal and greater than the actual (pattern 7) remained significant on more than one scale when a corrected alpha level was applied. Moreover, this pattern was the only pattern that accounted for a sizable amount of variance in loneliness across all scales of the Social Life Questionnaire. No pattern, however, reached Bonferroni corrected significance levels when predicting the loneliness related emotions. Thus, this result is the only finding from the individual patterns analyses that is readily interpretable.

This finding from the individual pattern analyses is informative in two respects. For one, it is consistent with the cognitive model of loneliness in that discrepancies from ideal relationship standards are associated with loneliness. Also, it indicates that both self defined and socially defined standards are important in the mediation of adolescent loneliness.

The findings of the study are consistent with a developmental perspective on loneliness. As previously discussed, it is generally accepted that younger adolescents are highly motivated to measure up to normative levels of social engagement. Thus, adolescents' perceptions of the typical students' social relations would be expected to be an important standard for evaluating the adequacy of their social lives. Also, the finding that all participants' ideal and typical student estimates were similar follows from a developmental model in that adolescents' desired levels of social involvement would be expected to be strongly influenced by their perceptions of relevant social norms.

However, in order to confirm the hypothesis that developmental factors play a role in mediating loneliness, it would be necessary to extend the study to an adult population. For instance, if it could be demonstrated that adults' loneliness was more strongly associated with personally defined than socially defined evaluation standards, this would offer further support for the particular importance of socially defined evaluation standards in mediating adolescent loneliness and also provide evidence for the hypothesized age related differences in the nature of the evaluation standards employed when assessing one's social life. Thus, it is important that future research investigate the relative importance of these internal standards in adult populations.

There are a number of possible reasons why the hypothesized relations between the two types of discrepancies and the emotions that accompany loneliness were not confirmed. In light of observations made during the students' participation in the study, the most obvious explanation is that the loneliness induction was not effective. Whether because of the protracted length of time required to complete the questionnaires - this component of the study was completed last - or because of reluctance to engage in the induction task in front of classmates, most students did not take the time required to imagine their most recent episode of loneliness and thereby gain a sense of the emotions that accompanied that experience. Thus, it is questionable to what extent their responses to the emotions questionnaire are valid indices of their actual emotional responses when lonely.

The moderately high correlation between anxiety and depression also may have made it difficult to document differential relations with the discrepancy scores. Moreover, given the well established finding that trait measures of depression and anxiety are highly correlated (see Dobson, 1985), it is possible that students' responses on the emotions questionnaire reflected their general tendencies to experience depression and anxiety rather than their specific experiences when lonely. Considering the nature of the exercise and also the participants' apparent inability or reticence to enter into the

spirit of the task, this latter speculation seems quite plausible.

Finally, it is possible that the affective responses that accompany loneliness are not differentially mediated, to any substantive degree, by the two types of cognitive discrepancies examined in this study. However, given the noted methodological problems, no conclusions as to the relationship between cognitive discrepancies and the affects that accompany loneliness can be drawn at this time. Thus, this question needs to be re-examined using a more effective procedure for tapping the experiences that accompany loneliness.

Several changes in the procedure could be made to overcome methodological problems that may have undermined this component of the study. For example, the loneliness induction could be strengthened using a guided imagery procedure administered by the experimenter. Emotions reported following completion of this task would be more likely to reflect loneliness state affects than trait affects. Alternately, the induction could be enhanced by conducting individual induction sessions. This approach would eliminate the influence of any social desirability factors and the accompanying social discomfort associated with a group administration. Having adolescents record their emotional experiences while feeling lonely in structured diaries might also be worth exploring. This procedure would not only eliminate those problems associated with group administrations, but would also provide a more ecologically valid measure of the emotions

that accompany individuals' loneliness experiences.

Causal Relationships

The cognitive model of loneliness postulates that discrepancies are a central factor mediating the experience of loneliness. However, although these results are at least partially consistent with this hypothesis, the correlational nature of the study cannot directly address this issue. In fact, it may be that the experience of loneliness itself fosters a negative perceptual bias which results in greater perceived discrepancies from evaluation standards. Consistent with this speculation, Jones (1985), among others, has suggested that "lonely persons may fail to perceive the social overtures and social reinforcements tendered by others" (p.229). Thus, although this research has emphasized the mediating influence of cognitive discrepancies on loneliness, the findings must be interpreted as descriptive rather than explanatory given that the causal direction of the relationship has not been identified.

To investigate the causal relations between cognitive discrepancies and loneliness, future research could employ two different strategies. Using a longitudinal design, it would be possible to examine the correspondence between changes in perceived discrepancies and loneliness over time. Or, to provide more definitive evidence of causality, loneliness could be induced in an experimental setting by manipulating levels of

perceived discrepancies. This latter approach poses certain ethical problems, however.

Generalization of the Findings

A concern in any survey study is the generalizability of the results. Considering the sampling procedure employed, selection biases in participation do not appear to pose a problem for this study. In the school surveyed, seven of nine grade ten compulsory guidance classes participated in the study and all but one student in the included classes completed the questionnaire. Furthermore, the two classes that did not participate in this study were excluded solely due to schedule conflicts. Therefore, it seems extremely unlikely that any selection biases influenced the outcome of the study. In addition, the student population reflected a diversity of social class and ethnic backgrounds. However, replication in other settings is necessary in order to ensure the generalizability of these results.

Implications for Helping Lonely Adolescents

The finding that discrepancies from desired levels of social contact predict loneliness in adolescence implies that one way to help lonely teenagers is to provide intervention programs that foster a reduction in these discrepancies. The further finding that discrepancies from a normative standard of social activity predict loneliness in this age group suggests that intervention programs should take into account the possibility

that lonely adolescents' desired standards are being influenced by their perceptions of the 'normal' (and perhaps socially expected) levels of social activity. In addition, the fact that teenagers spend a significant portion of their waking lives in school-related activities suggests the potential for providing treatment and prevention programs within schools.

Although the cognitive model of loneliness emphasizes people's subjective evaluations of their social relationships, cognitive discrepancies can be mediated by levels of actual social contact as well as by internal evaluation standards. That is, low levels of actual contact can predispose people to fall short of even relatively modest evaluation standards just as high social expectations can make it difficult for even socially active people to reach their desired social goals. Accordingly, treatment programs for adolescents should be tailored to the needs of the individual: increasing the levels of social contact of those with low levels of social interaction and promoting more realistic personal standards in people evidencing unrealistic social expectations. Similarly, prevention programs should be directed both toward providing ample opportunities for social interaction and toward insuring that students develop realistic social expectations based upon accurate information about their social milieu.

Several options are available to school officials for combatting adolescent loneliness. One option is to provide individual and/or group counselling services administered by

school or peer counsellors. This approach may be the best choice in situations where cognitive discrepancies are being mediated by personal factors. For example, where lonely students' deficits in age appropriate social skills are resulting in limited social contact, individual or group social skills training programs could teach them the skills necessary to establish more satisfying social relations. Alternately, where erroneous beliefs about others' social lives or unrealistic personal expectations for one's own social life are fostering the 'catch 22' situation of not reaching unobtainable social goals, certain cognitive restructuring interventions (see Burns, 1980; Young, 1982) could facilitate the development of more realistic expectations based upon more accurate knowledge of one's social milieu. Counselling sessions could also provide opportunities for lonely students to explore potentially enjoyable solitary activities that may help mitigate the experience of loneliness.

However, the social stigma associated with admitting to being lonely may discourage many lonely students from seeking counselling services. To help these individuals, information regarding realistic social goals and age appropriate social behavior could be provided within the classroom setting. Guidance/life science courses appear to offer the ideal setting in which to discuss these issues. In fact, considering the psychological impact of certain biological, cognitive, and psychosocial changes that occur during this developmental

period, guidance course curriculums would do well to include sections specifically dealing with each of these factors and the influences they have on teenagers' phenomenal experiences. Some discussion topics which could go far toward helping adolescents to develop more realistic social life evaluation standards include: teenagers' experiences of the "imaginary audience"; the influence of the mass media and peer environment upon adolescents' beliefs about normative social behavior; the issue of socially defined versus personally defined interpersonal goals; and the existence of individual differences in desired levels and types of social relations. Similarly, class discussions of the kinds of social skills necessary to promote and maintain friendships would provide less socially sophisticated students with useful information that could facilitate their social development.

A third way in which adolescent loneliness may be addressed within the school setting involves modifying the school environment in order to increase opportunities for social interaction among students. Advocacy of this type of intervention stems from the view that "the more associative the [school] enviornment, the more familiarity and acceptance in the [student] population, and the greater the diversity in the characteristics of individuals' friends" (Epstein, 1983, p. 60). This approach could thus have as much preventative as remedial value.

At least two general strategies could be employed to accomplish the goal of increasing social interaction among students. First, school officials could increase the number and variety of extracurricular activities such as clubs, intramural sports, and school societies available to students. These activities afford students the opportunity to meet others who share similar interests and may thereby foster new friendships. Such activities have also been shown to promote greater social integration within schools (Karweit, 1983), which in turn should lead to a greater appreciation of the diversity of other students' social lives. Thus, in addition to increasing social contact per se, extracurricular programs may facilitate the development of friendships by bringing together like minded students and also may foster more accurate perceptions of peers and their social relations.

The second approach to increasing social contact within the school involves having teachers introduce more cooperative learning activities into their instructional programs. Cooperative learning methods are based upon the assumption that learning tasks that require cooperation in order to be mastered promote greater student interaction, increase positive feelings among group members, and provide the basis for a perceived status similarity (Slavin & Hansell, 1983). These effects have been demonstrated in a number of studies (for a brief review of this literature, see Minuchin & Shapiro, 1983). Thus, these learning activities, like extracurricular activities, could

create opportunities to engage in more social interactions and to learn more about peers from other social groups.

Conclusions

The results of this study provide some support for a dual discrepancy model of loneliness. It appears that both personally defined and socially defined evaluation standards are associated with adolescent loneliness. In addition, the results were consistent with a developmental perspective on loneliness in that discrepancies from socially defined evaluation standards were found to be particularly important predictors of loneliness in this age group. Finally, with respect to the sample as a whole, it was observed that adolescents' ideal and typical estimates were similar across the scales of the questionnaire, thus suggesting that adolescents' personal standards for social relationships may be intimately linked to their perceptions of normative social behavior.

The apparent influence of the social environment on social expectations and opportunities for social contact suggests the potential value of school based programs in the prevention and remediation of adolescent loneliness. In particular, programs designed to foster more realistic social expectations through promoting greater social integration within the school environment could be introduced. Such programs could also facilitate the development of friendships through encouraging more social interaction in classes and extracurricular

activities. Thus, although students' social development has not been a traditional focus of the public school system, school-based programs could potentially have an impact on the high prevalence of adolescent loneliness.

APPENDICES

APPENDIX A

THE SOCIAL LIFE QUESTIONNAIRE

SOCIAL LIFE QUESTIONNAIRE

Sex: Male Female
(circle)

Age:

Ethnic Background:
(circle)

White Asian East Indian Black

Other
(specify)

PLEASE DO NOT TURN THE PAGE
UNTIL DIRECTED TO DO SO.

Weekday Activities with Social Friends

The following questions refer to your activities with your social friends. Although close friends may be part of this group, these questions relate to activities with any friends - not just your close friends.

Use the following scale to rate how often you actually get together with friends, how often you would like to get together with friends, and how often the typical student in your grade gets together with friends on schooldays.

PLEASE NOTE: For all questions in this questionnaire that ask about the typical student, base your answers on estimates of the TYPICAL STUDENT OF YOUR GENDER.

1. every schoolday
2. almost every schoolday
3. 3-4 schooldays per week
4. 2-3 schooldays per week
5. about one schoolday a week
6. 2 or 3 schooldays a month
7. about one schoolday a month
8. less than one schoolday a month
9. almost never

How often before classes start:
a) do you get together with friends ___
b) would you like to get together with friends ___
c) does the typical student get together with friends __

How often during lunch:
a) do you get together with friends ___
b) would you like to get together with friends ___
c) does the typical student get together with friends _

How often after school (i.e., between 3:00 p.m. and 6:00 p.m.):
a) do you get together with friends ___
b) would you like to get together with friends ___
c) does the typical student get together with friends _

How often on weekday evenings (count Mondays through Thursdays after 6:00 p.m.):
a) do you get together with friends ___
b) would you like to get together with friends ___
c) does the typical student get together with friends _

1. every schoolday
2. almost every schoolday
3. 3-4 schooldays per week
4. 2-3 schooldays per week
5. about one schoolday a week
6. 2 or 3 schooldays a month
7. about one schoolday a month
8. less than one schoolday a month
9. almost never

How often on weekdays:
a) do you talk on the phone with friends ___
b) would you like to talk on the phone with friends ___
c) does the typical student talk on the phone with friends _

How satisfied are you with the amount of weekday social activity you engage in?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

How satisfied is the typical student with the amount of weekday social accivity that she/he engages in?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

Weekend Activities with Social Friends

In this section you are being asked to estimate the amount of weekend time spent socializing with any friends - not just close friends.

Use the following scale to rate how often you actually get together with friends, how often you would like to get together with friends, and how often the typical student in your grade gets together with friends on weekends.

1. every weekend day or evening
2. almost every weekend day or evening
3. about once a week
4. about 2 or 3 times a month
5. about once a month
6. less than once a month
7. almost never

How often on a Saturday or Sunday day (i.e., before 6:00 p.m.):
a) do you get together with friends ___
b) would you like to get together with friends ___
c) does the typical student get together with friends _

How often on a Friday or Saturday evening:
a) do you get together with friends ___
b) would you like to get together with friends ___
c) does the typical student get together with friends _

How often anytime during the weekend:
a) do you attend a "special" event (i.e., a party, concert, sports game) with friends __
b) would you like to attend a "special" event with friends __
c) does the typical student attend a "special" event with friends __

How often on weekends:
a) do you talk on the phone with friends ___
b) would you like to talk on the phone with friends ___
c) does the typical student talk on the phone with friends _

How satisfied are you with the amount of weekend social activity you engage in?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

How satisfied is the typical student with the amount of weekend social activity she/he engages in?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

Overall, how satisfied are you with the quality of the relationships you have with your social group?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

Overall, how satisfied is the typical student with the quality of the relationships she/he has with her/his social group?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

Close Friendships

In this section you will be asked about your activities with close friends. In contrast to other friends who you may do things with, close friends are those friends whom you feel especially close to and who you feel comfortable talking with about personal matters.

How many close friends do you have? ____

Would you like to have more close friends than you have?
1) yes
2) no

How many close friends does the typical student have? ____

Use the following scale to rate how often you actually get together with close friends, how often you would like to get together with close friends, and how often the typical student in your grade gets together with close friends on schooldays.

1. every schoolday
2. almost every schoolday
3. 3-4 schooldays per week
4. 2-3 schooldays per week
5. about one schoolday a week
6. 2 or 3 schooldays a month
7. about one schoolday a month
8. less than one schoolday a month
9. almost never

How often before classes start:
a) do you get together with close friends ___
b) would you like to get together with close friends ___
c) does the typical student get together with close friends ___

How often during lunch:
a) do you get together with close friends ___
b) would you like to get together with close friends ___
c) does the typical student get together with close friends ___

How often after school (i.e., between 3:00 p.m. and 6:00 p.m.):
a) do you get together with close friends ___
b) would you like to get together with close friends ___
c) does the typical student get together with close friends ___

1. every schoolday
2. almost every schoolday
3. 3-4 schooldays per week
4. 2-3 schooldays per week
5. about one schoolday a week
6. 2 or 3 schooldays a month
7. about one schoolday a month
8. less than one schoolday a month
9. almost never

How often on weekday evenings (count Mondays through Thursdays after 6:00 p.m.):

a) do you get together with close friends ___
b) would you like to get together with close friends ___
c) does the typical student get together with close friends _

How often on weekdays:

a) do you talk on the phone with close friends ___
b) would you like to talk on the phone with close friends ___
c) does the typical student talk on the phone with close friends _

How satisfied are you with the amount of time you spend during the week with close friends?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

How satisfied is the typical student with the amount of time she/he spends during the week with close friends?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

Weekend Activities

In this section you are being asked to estimate the amount of weekend time spent socializing with any close friends.

Use the following scale to rate how often you actually get together with close friends, how often you would like to get together with close friends, and how often the typical student in your grade gets together with close friends on weekends.

1. every weekend day or evening
2. almost every weekend day or evening
3. about once a week
4. about 2 or 3 times a month
5. about once a month
6. less than once a month
7. almost never

How often on a Saturday or Sunday day (i.e., before 6:00 p.m.):
a) do you get together with close friends ___
b) would you like to get together with close friends ___
c) does the typical student get together with close friends ___

How often on a Friday or Saturday evening:
a) do you get together with close friends ___
b) would you like to get together with close friends ___
c) does the typical student get together with close friends ___

How often anytime during the weekend:
a) do you attend a "special" event (i.e., a party, concert, sports game) with close friends __
b) would you like to attend a "special" event with close friends __
c) does the typical student attend a "special" event with close friends __

How often on weekends:
a) do you talk on the phone with close friends ___
b) would you like to talk on the phone with close friends ___
c) does the typical student talk on the phone with close friends _

How satisfied are you with the amount of time on weekends you spend with close friends?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

How satisfied is the typical student with the amount of time on weekends she/he spends with close friends?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

Overall, how satisfied are you with the quality of your close friendships?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

Overall, how satisfied is the typical student with the quality of her/his close friendships?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

ROMANTIC RELATIONSHIPS

On average, how often have you dated in the last year?

1) More than once a week.
2) About once a week.
3) Every couple of weeks.
4) About once a month.
5) Less than once a month.
6) Once or twice.
7) I have not been on a date in the last year.

How often would you like to have dated in the last year?

1) More than once a week.
2) About once a week.
3) Every couple of weeks.
4) About once a month.
5) Less than once a month.
6) Once or twice.
7) I would not like to have dated in the last year.

How often do you think the typical student in your grade has dated in the last year?

1) More than once a week.
2) About once a week.
3) Every couple of weeks.
4) About once a month.
5) Less than once a month.
6) Once or twice.
7) The typical student has not been on a date in the last year.

Approximately what percentage of the people in your grade do you think have gone on at least one date in the last year?

(circle) 10% 20% 30% 40% 50% 60% 70% 80% 90%

Regardless of whether or not you have dated in the last year, how satisfied are you with the amount you have dated in the last year?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

Regardless of whether or not the typical student has dated in the last year, how satisfied is she/he with the amount she/he has dated in the last year?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

How many romantic relationships have you been involved in since beginning high school?

1) none
2) one
3) two
4) 3 or 4
5) 5 or 6
6) more than 6

Would you like to have been in more romantic relationships than you have been in?

1) yes
2) no

Approximately what percentage of the people in your grade do you think have been involved in <u>at least</u> <u>one</u> romantic relatonship?

(circle) 10% 20% 30% 40% 50% 60% 70% 80% 90%

Approximately what percentage of the people in your grade do you think have been involved in more than one romantic relationship?

(cirle) 10% 20% 30% 40% 50% 60% 70% 80% 90%

Are you "going steady" with someone at this time?

1) yes
2) no

If not, would you like to be "going steady" at this time?

1) yes
2) no

Approximately what percentage of the people in your grade do you think are "going steady" at this time?

(circle) 10% 20% 30% 40% 50% 60% 70% 80% 90%

Regardless of whether or not you have been involved in romantic relationships, how satisfied are you with your level of involvement in romantic relationships in the last year?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

Regardless of whether or not the typical student has been involved in romantic relationships, how satisfied is she/he with her/his level of involvement in romantic relationships in the last year?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

Specific Activities

The questions in this section refer to specific activities engaged in in the last year.

Use the following scale to rate how often you actually engage in the activities listed, how often you would like to engage in the activities listed, and how often the typical student engages in the activities listed.

1. every day
2. almost every day
3. 3-4 days per week
4. 2-3 days per week
5. about once a week
6. about 2 or 3 times a month
7. about once a month
8. less than once a month
9. almost never

Going out with friends for coffee/coke/food or whatever.
a) How often you do this: __
b) How often you would like to do this: __
c) How often the typical student does this: __

"Hanging out" with friends at a shopping mall, video arcade, community center, or whatever.
a) How often you do this: __
b) How often you would like to do this: __
c) How often the typical student does this: __

Engaging in a sports activity with friends.
a) How often you do this: __
b) How often you would like to do this: __
c) How often the typical student does this: __

Going shopping with friends.
a) How often you do this: __
b) How often you would like to do this: __
c) How often the typical student does this: __

Spending time "wandering around" with friends - down town, in a park, hiking, or whatever.
a) How often you do this: __
b) How often you would like to do this: __
c) How often the typical student does this: __

1. every day
2. almost every day
3. 3-4 days per week
4. 2-3 days per week
5. about once a week
6. about 2 or 3 times a month
7. about once a month
8. less than once a month
9. almost never

Going to a public event with friends - a movie, sports event, concert, dance, or whatever.

a) How often you do this: __
b) How often you would like to do this: __
c) How often the typical student does this: __

Spend time with friends at one or the other's home.

a) How often you do this: __
b) How often you would like to do this: __
c) How often the typical student does this: __

Going to a party.

a) How often you do this: __
b) How often you would like to do this: __
c) How often the typical student does this: __

How satisfied are you with the number of activities you engage in with friends?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

How satisfied is the typical student with the number of activities she/he engages in with friends?

1) completely satisfied
2) very satisfied
3) somewhat satisfied
4) neither satisfied nor dissatisfied
5) somewhat dissatisfied
6) very dissatisfied
7) completely dissatisfied

On average, how much time, per week, do you spend watching television?

1) almost everyday, for 3 or more hours/day
2) almost everyday, for 1-2 hours/day
3) almost every day, for less than one hour/day
4) 4-5 days/week, for 3 or more hours/day
5) 4-5 days/week, for 1-2 hours/day
6) 4-5 days/week, for less than one hour/day
7) 1-3 days/week, for 3 or more hours/day
8) 1-3 days/week, for 1-2 hours/day
9) 1-3 days/week, for less than one hour/day
10) I almost never watch television

STOP! STOP! STOP!

PLEASE DO NOT TURN THE PAGE

When everyone has finished this section, I will explain how I would like you to fill out the next section

APPENDIX B

THE REVISED UCLA LONELINESS INVENTORY

Directions: Indicate how often you feel the way described in each of the following statements. Circle one number for each.

	Never	Rarely	Sometimes	Often
I feel in tune with people around me.	1	2	3	4
I lack companionship.	1	2	3	4
There is no one I can turn to.	1	2	3	4
I do not feel alone.	1	2	3	4
I feel part of a group of friends.	1	2	3	4
I have a lot in common with the people around me.	1	2	3	4
I am no longer close to anyone.	1	2	3	4
My interests and ideas are not shared by those around me.	1	2	3	4
I am an outgoing person.	1	2	3	4
There are people I feel close to.	1	2	3	4
I feel left out.	1	2	3	4
My social relationships are superficial.	1	2	3	4
No one really knows me well.	1	2	3	4
I feel isolated from others.	1	2	3	4
I can find companionship when I want it.	1	2	3	4
There are people who really understand me.	1	2	3	4
I am unhappy being so withdrawn.	1	2	3	4
People are around me but not with me.	1	2	3	4
There are people I can talk to.	1	2	3	4
There are people I can turn to.	1	2	3	4

STOP STOP STOP

PLEASE DO NOT TURN THE PAGE
UNTIL DIRECTED TO DO SO.

When everyone has finished this section, I will explain how I would like you to fill out the next section.

APPENDIX C

THE LONELINESS-STATE EMOTIONS RATING SCALE

Everyone experiences feelings of loneliness at various times in his or her life. Below is a list of words that people have used to describe how they felt on those occasions when they felt lonely.

Take the next two or three minutes to recall the most recent occasion when you felt particularly lonely. Focus on that occasion and try to recall how you felt. Then, rate each of the following words on <u>how</u> <u>intensely</u> you felt this way on that occasion.

	Not at All	A Little	A Moderate Amount	Very Much
afraid.....	1	2	3	4
angry.....	1	2	3	4
annoyed.....	1	2	3	4
anxious.....	1	2	3	4
bored.....	1	2	3	4
bitter.....	1	2	3	4
depressed.....	1	2	3	4
desperate.....	1	2	3	4
disgusted.....	1	2	3	4
empty.....	1	2	3	4
fearful.....	1	2	3	4
furious.....	1	2	3	4
gloomy.....	1	2	3	4
helpless.....	1	2	3	4
hopeless.....	1	2	3	4
hostile.....	1	2	3	4
insecure.....	1	2	3	4

(MORE ON NEXT PAGE)

	Not at All	A Little	A Moderate Amount	Very Much
irritated.....	1	2	3	4
lifeless.....	1	2	3	4
mad.....	1	2	3	4
miserable.....	1	2	3	4
nervous.....	1	2	3	4
offended.....	1	2	3	4
outraged.....	1	2	3	4
panicky.....	1	2	3	4
sad.....	1	2	3	4
tired.....	1	2	3	4
tense.....	1	2	3	4
unhappy.....	1	2	3	4
worried.....	1	2	3	4

THANK-YOU VERY MUCH FOR PARTICIPATING IN THIS STUDY. HOPEFULLY, THE RESULTS FROM THE STUDY WILL PROVIDE VALUABLE INFORMATION ABOUT HIGH SCHOOL STUDENTS' SOCIAL RELATIONS AND HOW THEY EVALUATE THEIR SOCIAL LIVES. MOREOVER, WITHOUT YOUR GENEROSITY OF TIME AND EFFORT, I WOULD NOT HAVE BEEN ABLE TO COMPLETE THE STUDY (AND MY DEGREE). SO, THANKS AGAIN!!!

APPENDIX D

PARENT INFORMATION LETTER/CONSENT FORM

January 20, 1989.

Dear Parent or Guardian,

I am writing to ask permission for your son/daughter to participate in a study on high school students' social relationships. The study is concerned with finding out how socially active students are and also how they feel about their social relationships and social lives, in general. To obtain this information, I am asking that students fill out three questionnaires. One questionnaire asks students about how socially active they are, how socially active they would like to be, and how socially active their peers are. A second questionnaire asks students how they feel about their social relationships. And the third questionnaire asks students about how they feel when they are alone. From this study I hope to gain a better understanding of what causes some students to feel dissatisfied with their social relationships.

Approximately 250 students enrolled in the "Life Sciences" course at Burnaby North High School will be completing these questionnaires. All information provided by students will be completely anonymous. Students will not identify themselves, either by name or identification number, on any of the three questionnaires. Also, prior to beginning the questionnaires, students will be reminded that they do not have to participate if they would prefer not to, and further, that they may discontinue their participation at any time, should they choose to do so.

A presentation and discussion, covering a number of topics relevant to adolescents' social relationships, will follow completion of the questionnaires. The purpose of this presentation is to identify and discuss various factors which cause people to be dissatisfied with their social lives and, also, to discuss ways of dealing with this dissatisfaction. Upon completion of the study, the overall results will be made available to participants through their teachers. This summary will include only general findings; no information about individuals will be included. In fact, individuals' results cannot be made available given the anonymous nature of the data collection procedure.

This study has been approved by the Burnaby District School Board and the principle of Burnaby North High School. In accordance with school policy, no response is necessary if you are not opposed to your son/daughter participating in this study.

If, however, you do not wish your son/daughter to participate in this study, please sign below and return this letter to Mr. John Hall c/o Counselling Services at Burnaby North High School. If this form is not received by January 28, I will assume that you do not object to your son/daughter participating in this study and he/she will be allowed to participate.

If you have any questions about this study or would like additional information, please feel free to contact me at 687-4945; or leave a message at 291-3395 (Faculty of Education, S.F.U.) for me to phone you. Your consenting to your son's/daughter's participation in this study is greatly appreciated.

Respectfully,

Fraser Archibald

Faculty of Education
Simon Fraser University

I, _____ DO NOT want my son/daughter,
(signature of parent/guardian)

_____ to participate in this study.
(please print student's name)

APPENDIX E

CONSENT LETTER FROM BURNABY SCHOOL DISTRICT

BURNABY
SCHOOL DISTRICT 41

1989-01-12

Mr. Fraser Archibald,
#802 - 1255 Bidwell Street,
Vancouver, B.C.
V6G 2L8

Dear Mr. Archibald:

Having reviewed your research proposal *"Loneliness in Adolescence: Cognitive and Affective Correlates"*, permission is granted for you to approach Burnaby North Secondary School with a view towards data collection.

May I suggest that you contact Mr. John Hall, Department Head of Counselling, to discuss the next step of this project.

Please recognize that the approval to approach the school does not in any way oblige either the students or the staff to participate in the study, as all involvement in projects of this nature is done on a voluntary basis.

Best wishes with you study. I will look forward to receiving an abstract of your findings when they become available.

Yours truly,

Dr. Blake Ford,
Director of Instruction

BGF/jk

5325 Kincaid Street
Burnaby British Columbia
Canada V5G 1W2
(604) 299-0611
FAX (604) 299-8593

APPENDIX F

QUESTIONNAIRE INSTRUCTION SHEET

(READ TO STUDENTS)

Instruction Sheet

Before beginning the session, I, first, want to inform you that you are not obliged in any way to participate in this study. If, for whatever reason, you do not wish to participate you are free to go to the library (or study hall) until the questionnaires have been completed. At that time, I will be giving a talk on factors that cause teenagers to be dissatisfied with there social lives and you are welcome to attend if you wish.

Second, I want to point out to those who are planning to participate, that the information that you provide will be totally anonymous. What this means is that you will not identify yourself in any way, on the questionnaire, with the exception of identifying your age, sex, and ethnic background on the second page of the questionnaire.

Third, I want to point out to those who choose to participate that you are free to omit any questions that you prefer not to answer and also to terminate your participation at anytime during the session, should you chose to do so. Having said that, I will now briefly describe what this study is about and what you will be doing. When I am finished, those who decide not to participate may go to the library while the questionnaires are being completed. When everyone is finished, you will be notified so that you can join in on the discussion session if you want to.

I'm interested in looking at certain aspects of high school students social lives. More specifically, I'm interested in four issues related to students' social lives. First, I am interested in finding out how socially active students actually are. That is, how much time do you actually spend with your general group of friends, your close friends, and, for those who are dating or "going out" with someone at this time, with your partner. Second, I am interested in how socially active high school students would ideally like to be. Here, what I'm interested in knowing is how much time you would ideally like to spend with school friends, close friends, and romantic partners. Third, I'm interested in how socially active you think the typical grade 10 student in this school is. That is, how much time does the average student in grade 10 spend with school friends, close friends, and romantic partners. Finally, I'm interested in how satisfied students are with their present social lives.

To examine these issues, I am going to have you fill out a questionnaire which asks you to estimate your actual level of social activity, the amount of social activity you would ideally like to engage in, and the the amount of social activity that

the typical student in grade 10 engages in. In addition, at various points throughout the questionnaire you will be asked to estimate how satisfied you are with your various friendships and also how satisfied the typical student is with his/her various interpersonal relationships. Finally, I'll have you fill out two very brief questionnaires that ask you to descibe how you feel about certain aspects of your social lives. Any questions before we get going?

Ok, if you will turn to page three you will see that the first section of the questionnaire asks you about weekday social activities with people in your social group. Please follow along as I read the instructions for completing this section.

THE INTRODUCTION AT THE TOP OF PAGE TWO OF THE SOCIAL LIFE QUESTIONNAIRE IS READ TO THE STUDENTS

What I would like you to do is to use the scale at the top of this page to answer the questions that follow. For example, the first question asks.....

THE FIRST QUESTON IS REVIEWED, ILLUSTRATING HOW THE RATING SCALE IS TO BE USED WHEN ANSWERING THE ITEMS AND ALSO HOW THE ACTUAL, IDEAL, AND TYPICAL ITEMS ARE TO BE ANSWERED.

Are there any questions about how you should complete this section of the questionnaire?

ANY QUESTIONS ARE ANSWERED AT THIS POINT

Now if you will turn to page 4, you will find the exact same format only this time the questions ask you about weekend social activities with people in your social group.

THE INTRODUCTION AT THE TOP OF PAGE 4 IS READ ALOUD.

Here again, I would like you to use the scale at the top of the page to answer the questions that follow. Any questions?

Ok, if you will now turn to page 5 you will find a series of questions about weekday social activities with close friends.

THE INTRODUCTION AT THE TOP OF PAGE 5 IS READ TO THE STUDENTS AND THE DISTINCTION BETWEEN SOCIAL FRIENDS AND CLOSE FRIENDS IS REVIEWED.

As you can see, excepting the first three questions in this section and the focus of the section being on close friends rather than social friends, the items are identical to those in the first section of the questionnaire. So complete this section in exactly the same way that you completed the previous sections, bearing in mind that it is close friend relationships you are considering here. Similarly, on page 6, the questions asking about weekend activities with close friends are identical to those in the section on weekend activities with social

friends. Again, complete this section in the same manner as you complete the social friends segments of the questionnaire.

Next, starting on page 7, you will find a series of questions asking about romantic relationships. The format is somewhat different, here, owing to the nature of the questions. Consequently, separate scales or yes/no choices are provided for most of the questions in this section. In addition, a few questions ask you to estimate the percentage of grade 10 students who have gone on dates, are presently dating, etcetra. For these questions, report the percentage of grade 10 students in this school that you think would be covered by the particular question.

Finally, beginning on page 9 you will be answering some questions about certain specific social activities that students engage in: such as going to shows, dances, out for coffee/coke, etcetra. Again, use the scale provided at the top of page 9 to answer these questions. Ok, are there any questions before we begin?

ANY QUESTIONS ARE ANSWERED AT THIS TIME.

One last thing before we get started. Please complete the questionnaire only to the end of the specific activities section. If you turn to page 11 you will find a "Stop" page there. Please do not go past this point. When everyone has completed up to this point, we will review how the last sections should be completed.

STUDENTS COMPLETE TO THE END OF THE SPECIFIC ACTIVITIES SECTION.

Now if you will turn to page 12 you will find a list of 20 statements. The statements in this list describe how people may feel about certain aspects of their social lives.

THE DIRECTIONS ARE THEN READ TO THE STUDENTS

Are there any questions?

ANY QUESTIONS ARE ANSWERED.

Please note that there is another "Stop" page after this section. Please stop here. Again, when everyone is finished this section, we will review the last questionnaire.

STUDENTS COMPLETE THE UCLA LONELINESS INVENTORY

Ok, if you will turn to page 14 you will find a list of adjectives. This questionnaire asks you about feelings you have experienced on occasions when you have felt lonely.

THE INTRODUCTION AT THE TOP OF PAGE 14 IS READ TO THE STUDENTS AND ANY QUESTIONS ARE ANSWERED.

APPENDIX G

CORRELATION MATRIX OF QUESTIONNAIRE SUBSCALES AND CRITERION VARIABLES

Correlation Matrix of Subscale Scores and Criterion Variables

	LON	DEP	ANX	SFA	SFI	SFT	CFA	CFI	CFT	SAA	SAI	SAT	TQA	TQI	TQT
LON	1.00	.27	.26	-.48	-.38	-.15	-.49	-.29	-.17	-.33	-.18	.07[a]	-.47	-.33	-.12
DEP		1.00	.69	-.10[a]	-.02[a]	-.18	-.14	.03[a]	.19	-.18	-.04[a]	.02[a]	-.14	-.02[a]	.17
ANX			1.00	-.12	-.02[a]	.11[a]	-.12	.06[a]	.11[a]	-.15	.02[a]	.01[a]	-.13	.02[a]	.10[a]
SFA				1.00	.79	.40	.88	.72	.31	.78	.60	.22	.96	.78	.37
SFI					1.00	.54	.73	.61	.43	.63	.70	.33	.77	.93	.52
SFT						1.00	.33	.53	.74	.29	.42	.54	.37	.56	.91
CFA							1.00	.73	.35	.81	.59	.22	.96	.76	.36
CFI								1.00	.55	.61	.74	.35	.74	.95	.58
CFT									1.00	.24	.35	.53	.33	.50	.91
SAA										1.00	.81	.46	.89	.72	.36
SAI											1.00	.63	.68	.65	.51
SAT												1.00	.29	.44	.73
TQA													1.00	.80	.38
TQI														1.00	.58
TQT															1.00

[a] Correlations not reaching sigificance ($p<.05$).

Note. Variable names are presented on next page.

Variable Codes for Appendix G

LON - Loneliness Scale

DEP - Depression Scale

ANX - Anxiety Scale

SFA - Social Friends:Actual Subscale

SFI - Social Friends:Ideal Subscale

SFT - Social Friends:Typical Subscale

CFA - Close Friends:Actual Subscale

CFI - Close Friends:Ideal Subscale

CFT - Close Friends:Typical Subscale

SAA - Specific Activities:Actual Subscale

SAI - Specific Activities:Ideal Subscale

SAT - Specific Activities:Typical Subscale

TQA - Total Questionnaire:Actual Subscale

TQI - Total Questionnaire:Ideal Subscale

TQT - Total Questionnaire:Typical Subscale

APPENDIX H

THE SOCIAL LIFE QUESTIONNAIRE SUBSCALE

MEANS BY GENDER

Social Life Questionnaire Subscale Means by Gender

Subscale	Males	Females	F[a]
Social friends: actual	-.041	.042	0.73
Close friends: actual	-.031	.044	0.58
Specific activities: actual	.078	-.088	2.39
Social friends: ideal	-.076	.078	2.43
Close friends: ideal	-.076	.093	2.87
Specific activities: ideal	.063	-.075	1.71
Social friends: typical	-.098	.089	4.41*
Close friends: typical	-.120	.145	7.87**
Specific activities: typical	.065	-.077	1.93

*p<.05. **p<.01.

[a] For all F-tests, df(1,215).

APPENDIX I

CORRELATIONS OF DISCREPANCY PATTERNS

WITH CRITERION VARIABLES

Scale	Pattern 1	2	3	4	5	6	7	8	9	10	11	12
Social Friends												
LCN	.09	.11a	---	.07	.06	.12a	.33a	---	.16a	-.10	.14a	-.15a
DEP	-.06	.01	---	-.06	-.09	.03	.13a	---	-.03	.00	.10	-.21a
ANX	-.07	.06	---	-.02	-.06	.04	.05	---	-.01	.07	.05	-.11
Close Friends												
LCN	.02	.12a	---	-.03	.11	.24a	.27a	.16	.07	-.05	.00	-.15a
DEP	.00	-.14	---	-.03	-.02	.17	.06	.14	-.03	-.03	.08	-.14a
ANX	.03	-.06	---	-.04	.02	.03	.09	.14	-.04	.19a	.01	-.09
Specific Activities												
LCN	.05	.10	---	.05	.08	.11	.29a	---	-.09	---	.13a	-.19a
DEP	-.06	-.01	---	-.04	.00	.13a	.10	---	-.04	---	.04	-.10
ANX	-.07	.02	---	.01	.01	.02	.12	---	.07	---	.04	-.02
Total Questionnaire												
LCN	.18a	.09	---	-.07	.07	.10	.33a	---	.094	-.11	.03	-.15
DEP	.01	-.11	---	.01	-.05	.04	.11a	---	-.010	-.06	.17a	-.25a
ANX	.07	-.09	---	-.02	-.02	.06	.03	---	.01	.19a	.09	-.18a

a Correlations not reaching significance ($p<.05$).

Note. Variable names are presented on next page.

Variable Codes for Appendix I

LON - Loneliness Scale

DEP - Depression Scale

ANX - Anxiety Scale

APPENDIX J

CORRELATION MATRIX OF DISCREPANCY SUBSCALES AND CRITERION VARIABLES

Correlation Matrix of Discrepancy Subscales and Criterion Variables

	LON	DEP	ANX	SAI	SAT	CAI	CAT	AAI	AAT	FAI	FAT
LON	1.00	.27	.26	.13	.31	.25	.29	.24	.39	.23	.43
DEP		1.00	.69	.13	.25	.23	.28	.22	.19	.22	.25
ANX			1.00	.14	.20	.26	.21	.26	.16	.25	.22
SAI				1.00	.49	.53	.36	.61	.37	.83	.30
SAT					1.00	.46	.80	.46	.72	.55	.57
CAI						1.00	.55	.77	.43	.90	.35
CAT							1.00	.49	.76	.54	.58
AAI								1.00	.58	.87	.39
AAT									1.00	.50	.61
FAI										1.00	.39
FAT											1.00

Note. All correlations are significant ($p.<.05$).

Variable names are presented on next page.

Variable Codes for Appendix J

LON - Loneliness Scale

DEP - Depression Scale

ANX - Anxiety Scale

SAI - Social Friends:Actual-Ideal Subscale

SAT - Social Friends:Actual-Typical Subscale

CAI - Close Friends:Actual-Ideal Subscale

CAT - Close Friends:Actual-Typical Subscale

AAI - Specific Activities:Actual-Ideal Subscale

AAT - Specific Activities:Actual-Typical Subscale

FAI - Total Questionnaire:Actual-Ideal Subscale

FAT - Total Questionnaire:Actual-Typical Subscale

APPENDIX K

PATTERN CODING STATEMENTS FOR THE TOTAL QUESTIONNAIRE SCALE

Pattern Coding Vectors for the Total Questionnaire Scale

Pattern	Coding Statements
1	IF ((C-A) GE .411 AND (A-B) GE .382) D1=1
	IF (NOT((C-A) GE .411 AND (A-B) GE .382)) D1=0
2	IF ((ABS(A-C)) LT .411 AND (A-B) GE .382) D2=1
	IF (NOT((ABS(A-C)) LT .411 AND (A-B) GE .382)) D2=0
3	IF ((A-C) GE .411 AND (C-B) GE .421) D3=1
	IF (NOT((A-C) GE .411 AND (C-B) GE .421)) D3=0
4	IF ((A-B) GE .382 AND (ABS(B-C)) LT .421) D4=1
	IF (NOT((A-B) GE .382 AND (ABS(B-C)) LT .421)) D4=0
5	IF ((A-B) GE .382 AND (B-C) GE .421) D5=1
	IF (NOT((A-B) GE .382 AND (B-C) GE .421)) D5=0
6	IF ((C-B) GE .421 AND (B-A) GE .382) D6=1
	IF (NOT((C-B) GE .421 AND (B-A) GE .382)) D6=0
7	IF ((ABS(B-C)) LT .421 AND (B-A) GE .382) D7=1
	IF (NOT((ABS(B-C)) LT .421 AND (B-A) GE .382)) D7=0
8	IF ((B-C) GE .421 AND (C-A) GE .411) D8=1
	IF (NOT((B-C) GE .421 AND (C-A) GE .411)) D8=0
9	IF ((B-A) GE .382 AND (ABS(A-C)) LT .411) D9=1
	IF (NOT((B-A) GE .382 AND (ABS(A-C)) LT .411)) D9=0
10	IF ((B-A) GE .382 AND (A-C) GE .411) D10=1
	IF (NOT((B-A) GE .382 AND (A-C) GE .411)) D10=0
11	IF ((ABS(A-B)) LT .382 AND (C-B) GE .421) D11=1
	IF (NOT((ABS(A-B)) LT .382 AND (C-B) GE .421)) D11=0
12	IF ((ABS(A-B)) LT .382 AND (B-C) GE .421) D12=1
	IF (NOT((ABS(A-B)) LT .382 AND (B-C) GE .421)) D12=0

Note. The coding statements presented here are the pattern coding vectors for the total questionnaire scale. The coding statements were the same for all scales with the exception that the confidence intervals around each discrepancy estimate differed across the four scales according to the standard error estimates of the applicable subscales.

APPENDIX L

STANDARD ERROR ESTIMATES FOR THE SOCIAL LIFE QUESTIONNAIRE SUBSCALES

Standard Error Estimates of the Actual, Ideal, and Typical Subscales

Scale	Subscale		
	Actual	Ideal	Typical
Social friends	0.251	0.244	0.261
Close friends	0.244	0.240	0.251
Specific activities	0.231	0.239	0.251
Total questionnaire	0.186	0.196	0.225

Note. Estimates are based upon Z-score transformed data.

APPENDIX M

INDIVIDUAL PATTERN REGRESSION ANALYSES

ONTO DEPRESSION

All-patterns-entered Regression Equations

predicting Depression (N=214)

Code	Pattern	sr	sr^2	t
Social friends scale				
12	A=I>T	-.16	.026	-2.45*
7	I=T>A	.13	.017	2.05*
Close friends scale				
6	T>I>A	.15	.023	2.33*
8	I>T>A	.14	.020	2.12*
Total questionnaire scale				
12	A=I>T	-.18	.032	-2.78**

* p<.05. **p<.01.

+ Reaching Bonferoni corrected alpha level (p=.001)

APPENDIX N

INDIVIDUAL PATTERN REGRESSION ANALYSES

ONTO ANXIETY

All-patterns-entered Regression Equations

predicting Anxiety (N=214)

Code	Pattern	sr	sr^2	t
Close friends scale				
10	I>A>T	.20	.040	2.99**
8	I>T>A	.14	.020	2.06*
Total questionnaire scale				
10	I>A>T	.19	.036	2.80**

*p<.05. **p<.01.

+ Reaching Bonferoni corrected alpha level (p=.001)

APPENDIX O

CORRELATIONS OF QUESTIONNAIRE SUBSCALE SCORES

WITH TIME SPENT WATCHING TELEVISION

Correlations of Questionnaire Subscale Scores with Time Spent Watching Television

Subscale	Television Viewing
Social Friends: actual	-.03
Social Friends: ideal	.12*
Social Friends: typical	.17**
Close Friends: actual	.01
Close Friends: ideal	.08
Close Friends: typical	.17**
Specific Activities: actual	-.03
Specific Activities: ideal	.08
Specific Activities: typical	.15*
Total Questionnaire: actual	.01
Total Questionnaire: ideal	.10
Total Questionnaire: typical	.18**

*p<.05. **p<.01.

APPENDIX P

CONSENT LETTER FROM THE AMERICAN PSYCHOLOGICAL ASSOCIATION FOR USE OF THE REVISED UCLA LONELINESS INVENTORY

American Psychological Association

Advancing psychology as a science, a profession, and as a means of promoting human welfare

June 15, 1989

Dr. Ron Marx
Faculty of Education
Simon Fraser University
Burnaby, British Columbia
Canada V5A 1S6

RE: Frazier Archibald

Dear Dr. Marx:

As a follow up to my previous conversation with Frazier Archibald, I am writing to confirm that the American Psychological Association has indeed granted permission to Mr. Archibald to include "The Revised UCLA Loneliness Scale" in his research and dissertation.

The material was included in the article entitled "The Revised UCLA Loneliness Scale: Concurrent and Discriminant Validity Evidence"; authored by Dan Russell, Letitia Peplau, and Carolyn Cutrona; and published in Journal of Personality and Social Psychology (1980), Vol. 39, #3, 472-480. The Journal of Personality and Social Psychology is an APA-copyrighted publication.

It is the policy of APA to grant permission contingent upon the requestor also obtaining like permission from the author. Since Mr. Archibald has already fulfilled this contingency, he is free to use the requested APA-copyrighted material. We simply ask that the material is properly referenced.

Should you have any questions, feel free to contact me at 703-247-7874.

Sincerely,

Donna J. Beavers
Copyrights & Permissions
APA Publications

cc: Frazier Archibald

1200 Seventeenth Street, N.W.
Washington, D.C. 20036
(202) 955-7600

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