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Loneliness in Pre- Through Late Adolescence: Exploring the Contributions of a Multidimensional Approach

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A multidimensional loneliness measure was administered to 444 subjects in the 11–17 age range. The four-scale instrument probes for loneliness in relationships with parents and peers, and for aversion to and affinity for aloneness. All subscales were shown to exhibit high reliability and excellent factorial validity. With regard to age effects, a marginally significant increase was found for parent-related loneliness, accompanied by a sudden drop at the seventh-grade level. A decreasing age trend emerged in both peer-related loneliness and aversion to aloneness. A set of variables pertaining to subjects' social integration (number of friends, quality of friendships) and psychological functioning (outlook on the future) accounted for a sizable portion of the variance in all four scales, particularly in peer-related loneliness. Implications of these findings are discussed and suggestions for future research are outlined.

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INTRODUCTION

According to recent surveys, loneliness constitutes an important aspect of adolescents' experience (Brennan, 1982). However, the lack of adequate measures, and the considerable gap between theoretical conceptions of loneliness and its operational definitions, have seriously hampered research in this area. In fact, most researchers have relied on self-report instruments probing for perceived frequency and degree of the negative feelings generally associated with loneliness (Ostrov and Offer, 1978; Williams, 1983). The widely used UCLA (University of California, Los Angeles) Loneliness Scale (Russell *et al.*, 1978, 1980) provides an excellent example of this approach (see, e.g., Avery, 1982; Goswick and Jones, 1982; Moore and Schultz, 1983). Following the dominant social psychological perspective on loneliness (Perlman and Peplau, 1981), high scores on these unidimensional measures have been attributed to perceived deficits in the subjects' network of social relations. More specifically, loneliness is thought to ensue when the person's expectations regarding interpersonal relations cannot be met within his or her social network.

However, the specific nature of these relational deficits typically remains unexplored. Directly asking for feelings of isolation and desertion in different kinds of relations, therefore, may provide a more adequate picture of loneliness. In particular, specific types of loneliness could be distinguished by means of such multidimensional instruments. Several studies on adult samples have tried to distinguish social (i.e., group-related) loneliness and emotional loneliness (i.e., lack of an intimate partner; Russell *et al.*, 1984; see also Weiss, 1973) or explored loneliness feelings in romantic-sexual, family, friendship, and group relations (Schmitt and Kurdek, 1985; Schmidt and Sermat, 1983). The development of analogous multidimensional instruments for use with younger age groups has been advocated for some time (Asher *et al.*, 1984). But these recommendations have not been acted upon. Recently, however, Marcoen and Brumagne (1985) focused on children's and adolescents' feelings of loneliness in their relationships with both parents and peers. The results were promising. Factor analysis of a preliminary loneliness scale, which also included boredom and aloneness items, revealed two reliable interpretable factors: peer-related loneliness and parent-related loneliness.

The present paper builds on these last results. A multidimensional loneliness measure was constructed for use with adolescents. Two of its subscales measure perceived loneliness in relations with parents and peers, and are revised and expanded versions of the Marcoen and Brumagne (1985) scales. From the beginning of the scale development process, a need was felt to cover related constructs of positively and negatively experienced aloneness, with boredom one of the main aspects of unwanted aloneness. Therefore, it was

decided to add two new scales, which deal with subjects' aloneness or social isolation, i.e., the mere fact of having no other people around, and their reactions to this particular situation.

Most frequently, this state of being alone, designated by the term *solitude* in both the English and the French language, has been conceived of as an undesirable one, necessarily leading to loneliness. Yet centuries of solitary quests for deep religious and mystical experiences, as well as recent research, have shown that solitude can have positive emotional effects as well. For some people at least it may be a time for renewal (Larson *et al.*, 1982) and, indeed, a healing experience (Suedfeld, 1982). And although aloneness occurs among most adults as if by default, some bright and somewhat older adolescents actively strive for solitude (Larson and Csikszentmihalyi, 1978). The benefits of this voluntary isolation seem to lie in the cognitive domain. Better concentration, which allows the subject to make up his or her mind, is mentioned as its primary motive. Yet the negative effects of being alone, which include greater loneliness and more negative moods, such as boredom, may be quite substantial, and both sides of being alone may be experienced by one and the same person.

In short, two clusters of reactions to being alone can be distinguished, each of which may refer to a particular type of persons. One group of people show negative views of their being alone, tend to attribute their aloneness to other people's inadequacies, and try to cope with their being alone through seeking contact with others. Other types of people exhibit a positive evaluation of being alone, attribute their aloneness to their own inclinations and habits, and try to rely on their own resources in coping with being alone. Therefore, two aloneness scales have been constructed, referring to unwanted loneliness-provoking isolation and voluntary isolation, respectively. The descriptive labels "affinity for aloneness" and "aversion to aloneness" seem to adequately capture their complex content.

In summary, a four-scale measure of loneliness was developed in which the feelings of loneliness and aloneness are each addressed by a pair of scales. The present study evaluates the usefulness of this newly developed instrument along psychometric lines. In addition, age and sex differences on all scales are explored. And finally, correlations are established with ecological, social, and psychological factors conducive to loneliness.

Age and sex differences in loneliness have long been a point of concern to scholars of adolescent development. Taking the unidimensional theory of loneliness as a starting point, straightforward predictions can be made. First of all, a linear increase in perceived loneliness is expected when moving from late childhood through adolescence. This seems natural, indeed, since both the adolescent's growing cognitive capacities and his/her rising social expectations increase the likelihood of perceived deficits in social relations.

Furthermore, this trend would hold for both sexes. But up to the present, research on both age and sex differences in adolescent loneliness failed to confirm these predictions. Rather, a whole body of equivocal results has been produced. Some authors, e.g., found the expected increase in loneliness between ages 12 and 18 (Ostrov and Offer, 1978), whereas others failed to confirm this finding (Avery, 1982). And Avery (1982) found boys to report higher levels of loneliness than girls. This unexpected finding was further qualified by subjects' sex role orientation.

These inconsistent findings, however, may be due to the unidimensional view adopted in these studies. The use of multidimensional measures enables researchers to distinguish various levels of loneliness as experienced in different relations. Consequently, a much clearer picture of results may emerge. Considerations like these led some authors to develop the Differential Loneliness Scale (DLS; Schmitt and Kurdek, 1985; Schmidt and Sermat, 1983) for use with adults, where an equally confused body of results had been gathered. But this differential approach seems particularly suited for the adolescent period, when important changes take place in the network of social relations. Since the impact of the family tends to decline as the peer group comes to the fore, opposing developmental trends are expected in loneliness with regard to these relations. Perceived loneliness in parental relations will decline during adolescence, while peer-related loneliness will increase. In addition, important differences are expected between boys' and girls' experience of loneliness. Due to fundamental differences in socialization history, adolescent girls are expected to value their relationship with their parents more highly than boys and therefore should experience higher levels of parent-related loneliness. But as adolescents of both sexes hold equally high expectations of relations with peers, no sex differences should emerge in peer-related loneliness.

In their exploratory study, Marcoen and Brumagne (1985) could only partially confirm these predictions. With regard to parent-related loneliness, a marginally significant age trend suggested that seventh graders experienced lower levels of loneliness than fifth and ninth graders. There were no age differences in peer-related loneliness, but as expected, girls received higher scores on parent-related loneliness than boys. These unsatisfactory results may be due in part to the rather restricted age range, i.e., from pre- through midadolescence, covered in this study. Therefore, a replication study including late adolescents seems worth undertaking.

As a consequence, the multidimensional predictions with regard to age and sex differences in adolescent loneliness were restated for this study. In addition, tentative hypotheses were formulated with regard to the newly developed aloneness scales. In view of the well-established increase in cognitive acuity and social sensitivity throughout adolescence, the following trends

were expected: Positive views on being alone and the concomitant active and internal modes of coping and attribution should increase during adolescence. And negative views on being alone and the corresponding ways of coping and attribution should decrease within the same age range. No sex differences are expected on either of these scales.

In regard to social and psychological influences, the picture is much clearer. Lack of social integration and negative self-evaluation are thought to and have in fact been shown to predict higher levels of adolescent loneliness (Downey, 1984; Goswick and Jones, 1982; Moore and Schultz, 1983). In order to provide preliminary validity data for the newly developed multidimensional loneliness measure, subjects' loneliness scores have been related to these social and psychological variables. But in view of the multidimensional approach adopted in this study, the quality of social relations in both the peer group and the home environment have been examined. Self-assurance and personal outlook on the future were incorporated as psychological predictors of loneliness in both parental and peer relations. Finally, ecological factors such as hometown size and housing conditions were included. These factors were thought to interfere with the establishment, maintenance, and quality of relationships with peers, and to a lesser extent, with parents, in much the same way as the social and psychological factors mentioned above. Few specific expectations were stated for the scales measuring evaluation of aloneness. A single attribution question has been incorporated, which provides a direct validity check for an important aspect of these scales' content.

To sum up, then, the main objectives of this study are the following: (a) to develop a psychometrically sound, multidimensional loneliness measure; (b) to use this instrument in an exploration of age and sex differences in loneliness through late childhood and adolescence; and (c) to provide concurrent validity data for each of the subscales.

METHOD

Sample

Subjects in this study were 444 children and adolescents from grades 5–11. A breakdown by grade yielded 113 fifth graders (63 girls), 134 seventh graders (63 girls), 94 ninth graders (52 girls), and 103 eleventh graders (44 girls). The seventh, ninth, and eleventh graders attended two secondary schools (junior–senior high schools) in a town in the province of Antwerp (Belgium). The fifth graders attended two elementary schools that are feeder schools to the secondary schools. Accordingly, a common socioeconomic

background, which may be designated as middle class, may be assumed for all age groups. Drop-out rates are low, particularly so in higher grades. Some inner school changes inevitably occur during high school in the Belgian secondary school system as less gifted students shift to less demanding options in higher grades. However, large schools that offer a wide range of options were contacted for the research project, and nearly all pupils participated in the study in the respective grades. Therefore, the sample is fairly representative of the Belgian high-school population and elementary grades preparing for this type of education.

Measures

Loneliness Measure

The Louvain Loneliness Scale for Children and Adolescents (LLCA), a Dutch 48-item scale, was used. Items are presented in the appendix. As can be seen, the instrument consists of four scales of 12 items each, measuring loneliness in parental relations (L-PART), loneliness in peer relations (L-PEER), and affinity for aloneness (A-POS: positively experienced aloneness) or aversion to aloneness (A-NEG: negatively experienced aloneness), respectively. Subjects respond on a 4-point scale (*often, sometimes, seldom, never*). Scores, therefore, range from 0 to 48 points for all subscales. Some items of the parents scale are framed in positive terms and consequently are keyed in reverse direction. But high scores always indicate high levels of parent- and peer-related loneliness, and positive and negative views on aloneness, respectively.

In order to verify the translation of the scales, a double matching procedure was executed. First, a person outside the research team matched the original Dutch items and the translated items in the appendix. Only 2 of the 48 items were mismatched, namely, items 33 ("I feel abandoned by my friends") and 35 ("I feel left out by my friends"). Second, the same person matched the English version and a backtranslation in Dutch by another person unfamiliar with the research project. This time, the matching was perfect.

Biographical Data Sheet

In order to obtain information on social, psychological, and ecological conditions, a short biographical data sheet was used that was specifically constructed for this study. After the usual introductory questions for subjects' age, sex, and parents' occupation, a total of 16 questions were asked. These items may be grouped into four basic categories.

A first group of items centers around subject's social integration in the peer group. These questions probe for the number of intimate friends (1), the recent occurrence of arguments with friends of the same (2) and the opposite sex (3), and membership of an organized youth movement (e.g., boy scouts, girl guides; 4). Another group of items investigated the home environment, and focused mainly on family composition and functioning. Questions asked whether the subject was living with both parents (5), whether father (6) or mother (7) was working outdoors, and whether he or she had any brothers or sisters (8).

A third group of questions addressed the subject's ecological situation. Questions asked for the subject's place of residence (9) and housing conditions (10). Additional items assessed whether or not the family had moved to a new place during the last year (11) and whether the subject had changed school during this same period (12). Finally, a group of items on psychological factors were added. These questions asked whether the subject had problems getting along in school (13) and explored feelings of personal strength and self-assurance (14), as well as personal outlook on the future (15). A last question specifically asked where the subject situated the cause of his or her unpleasant feelings when he or she felt lonely (16). This question provided a direct validity check for the attribution of aloneness, which is incorporated in both aloneness scales.

Questions did not actually appear in this order on the data sheet, but items from each of the four groups were intertwined. (Copies of the biographical data sheet may be obtained from the first author.) In general, precoded answer alternatives were provided (e.g., *yes, no/many, some, few*). Response coding and subsequent data processing are discussed below, in the results section.

Procedure

The LLCA and the biographical data sheet were administered to all subjects during regularly scheduled courses. Both instruments were completed in a single 50-minute session. All administrations were supervised by the third author.

RESULTS

Results may be organized most profitably around three broad themes. Therefore, psychometric properties of the loneliness scales, age and sex differences in four aspects of loneliness and being alone, and preliminary validity data, as provided by the biographical data sheet, are addressed in turn.

Psychometric Properties

A factor analysis (principal factoring with iterations) was performed on the data. Four factors were retained, easily identifiable as loneliness in peer relations, loneliness with parents, negative and positive evaluations of being alone, respectively. These factors were then rotated to match a binary target matrix where, according to a priori scale assignment, each item had a loading of one on a single factor and a zero loading on all of the other factors. High Tucker coefficients of congruence (ranging from .87 to .97) clearly confirmed this hypothesized factor structure. As shown in the appendix, all items (with the exception of item 2) have a high loading (.40 or above) on the predicted factor and a low loading (i.e., .30 or below) on all other factors. Some exceptions are to be noted, in particular the factor III (A-NEG) items 10, 12, 32, and 39, which all have a subsidiary loading on factor I (L-PEER). But in all, excellent factorial validity has been established for the newly developed four-scale instrument.

Descriptive characteristics of all subscales can be found in Table I. Internal consistency (Cronbach's alpha) exceeded .80 in all cases, warranting use of all scales for group comparisons. Due to their more diverse content, both aloneness scales are somewhat less reliable, but still figure within the range of acceptability. An interesting pattern of intercorrelations revealed that all four scales are tapping somewhat different aspects of the experience of loneliness and aloneness. Although significant intercorrelations are obtained, the amount of shared common variance is in fact rather low (from 1 to 14%). The subscales assessing loneliness in different relationships (L-PART and L-PEER) show low correlations with the other two scales, which tap the person's attitude to being alone, his attribution of and coping with aloneness. More importantly, the parents and peers scales, while significantly intercorrelated, clearly address different aspects of subjects' experience of loneliness. And the A-POS and A-NEG scales should not be considered op-

Table I. Intercorrelations, Internal Consistencies (Coefficient Alpha), and Descriptive Characteristics (Mean, Standard Deviation) for all Four Loneliness Subscales

	Subscale					
	L-PEER	A-POS	A-NEG	Alpha	*M*	*SD*
L-PART	.24[c]	.25[c]	.12[b]	.88	18.80	5.58
L-PEER		.37[c]	.21[c]	.87	21.08	6.73
A-POS			.08[a]	.80	29.70	5.96
A-NEG			–	.81	30.94	6.38

[a] $p < .05$.
[b] $p < .01$.
[c] $p < .001$.

posites; each probes for nearly independent aspects of the evaluation of aloneness, attribution, and coping. In summary, a firm psychometric foundation has been laid for the use of the LLCA. And the distinction of four scales, based on theoretical considerations, is fully corroborated. So we now turn to an analysis of age and sex differences in adolescent loneliness.

Age and Sex Differences

The data were analyzed according to a 4(Grade) by 2(Sex) analysis of variance design. Separate analyses were run for each scale. No sex differences emerged for either scale. Age effects, however, did emerge on all scales, with the exception of the A-POS scale ($F[3,436] = 4.08$, $p < .01$, 12.59, $p < .001$ and 7.87, $p < .001$, for the L-PART, L-PEER, and A-NEG scales, respectively). However, scores on these scales show diverging developmental trends, as subsequent analyses revealed (alpha was set at .05 for all the a posteriori tests to be reported). The reader is referred to Table II, which gives an overview of the principal findings (i.e., main effects).

With regard to parent-related loneliness, Tukey–Kramer pairwise comparison tests revealed a marginally significant trend ($p < .10$) for eleventh graders to score higher than fifth graders. In addition, seventh graders obtained significantly lower scores than their eleventh-grade companions. With some caution, a slight increase may be inferred, along with a marked drop at the seventh-grade level. On the L-PEER and A-NEG scales, fifth graders were found to score higher than seventh, ninth, and eleventh graders. A linear decreasing trend, therefore, seems to fit the data for both scales rather well.

It may be added here that an age by sex interaction was found for the peers scale, which was much less important ($F[3,436] = 5.20$, $p < .01$) than the main effect obtained for age. To further explore this interaction, simple

Table II. Loneliness Subscale Means and Standard Deviations at Four Grade Levels

		Grade			
Scale		5 (n = 113)	7 (n = 134)	9 (n = 94)	11 (n = 103)
L-PART	*M*	18.26	17.73	19.49	20.17
	SD	4.69	5.92	5.22	7.21
L-PEER	*M*	24.04	21.01	19.63	19.23
	SD	6.68	6.70	6.38	6.11
A-POS	*M*	29.64	29.78	28.90	30.40
	SD	6.12	5.64	6.26	5.92
A-NEG	*M*	33.29	30.25	30.86	29.32
	SD	5.73	6.00	6.49	6.80

main effects tests (Kirk, 1982, pp. 365–369) were computed, i.e., age differences were assessed in each of both sexes. Following Kirk's recommendations, the collection (or family) of simple main effects hypotheses was adopted as the conceptual unit for error rate. Consequently, alpha was set at (.05 × 3)/6 = .025. The age effect proved significant in both boys and girls (F[3,436] = 9.08 and 9.62, respectively). In the male subsample, Tukey–Kramer tests indicated that fifth (M = 23.50) and seventh graders (M = 22.54), who were not found to differ from one another, scored significantly higher than eleventh graders (M = 17.92), with ninth graders falling in between (M = 20.31). In the female subsample, fifth graders (M = 24.48) received significantly higher scores than the remaining groups (M = 19.30, 19.08, and 21.00 for seventh, ninth, and eleventh graders, respectively). In short, the linear decreasing trend on the L-PEER scale seems to hold across gender, in spite of small deviations from parallelism.

In summary, the expectations with regard to age differences have not been met. While a decrease in parent-related loneliness had been predicted along with an increase in peer-related loneliness, quite a different picture seems to hold. A marginally significant increase was found for the parents scale along with a significant drop at the seventh-grade level. An overall decreasing trend was noted for the peers scale. Likewise, results with regard to the aloneness scales were not completely satisfactory. The expected decreasing trend was observed for the A-NEG scale, but the increasing trend for the A-POS scale failed to emerge. The expected sex difference favoring girls did not emerge on the parent-related loneliness scale. Finally, as expected, no significant sex differences emerged on the aloneness scales or the peers scale.

Validity Data

As already mentioned in the introduction, a set of social, family, ecological, and intrapersonal variables have been entered as predictors of the various aspects of loneliness and aloneness. In all, 17 predictors were used. This set comprises the 16 items of the biographical data sheet as well as parents' socioeconomic status. Most of the independent variables (or predictors) were scored in a simple, binary way (subject had changed school or not; subject felt sure or unsure; aloneness was attributed to self or others). But for some predictors, three or more categories were used. Parents' socioeconomic status, e.g., was grouped into three categories: *high, medium,* and *low.* Likewise, subjects were classified as having *none, a few,* or *many* intimate friends. Subjects' outlook on the future was classified into four broad categories: *lucky, slightly lucky, just normal,* and *unlucky.* Size of place of residence was rated on a 5-point scale: *less than 5000; 5000 to 10,000; 10,000*

Table III. Standardized Regression Weights (Beta) in the Regression of Social (Peers, Family), Ecological, and Psychological Variables on Loneliness Scores

Item	Category	Subscale L-PART	L-PEER	A-POS	A-NEG
	Social integration (peer group)				
1	Number of intimate friends	$-.14^{b}$	$-.38^{d}$	$-.19^{c}$	
2	Recent arguments with same-sex friend		$.24^{d}$	$.13^{b}$	$.19^{c}$
4	Membership of youth movement				$.11^{a}$
	Family functioning				
6	Father working outdoors			$-.13^{b}$	
8	Sibling presence		$.11^{b}$		
	Ecological situation				
11	Recent school change	$-.10^{a}$			
	Psychological factors				
13	Problems at school		$.10^{a}$	$-.12^{b}$	
15	Personal outlook on the future	$.23^{d}$	$.14^{c}$	$.17^{c}$	
16	Attribution of aloneness		$.14^{c}$		$.10^{a}$
	Multiple correlation	.35	.56	.39	.30

$^{a}p < .10$.
$^{b}p < .05$.
$^{c}p < .01$.
$^{d}p < .001$.

to 20,000; 20,000 to 30,000; and *30,000 to 40,000* inhabitants. And finally, housing conditions were grouped into five categories along a continuum ranging from negative (i.e., loneliness-provoking) conditions to positive conditions. More specifically, *remote house, flat, isolated house, semidetached house,* and *house in the row* have been used as categories on this continuum.

Four simple (nonstepwise) multiple regression analyses were performed, each of which used one of the loneliness or aloneness scales as the dependent variable. Results of these analyses have been summarized in Table III, which only presents variables that proved sufficiently predictive (i.e., betas $p < .10$). Few variables were found to enter the regression equation for the parents scale. Higher levels of parent-related loneliness were found among subjects who had few friends, had not changed school recently, and evidenced a negative outlook on the future (i.e., felt unlucky). A far greater number of variables proved effective predictors for the peers scale. Higher levels of peer-related loneliness occurred in subjects who had fewer friends, reported recent quarrels with same-sex friends, had other brothers or sisters at home, had problems at school, felt unlucky, and attributed their state of being alone to others. An affinity for aloneness was evidenced by adolescents who had fewer friends, had recently quarreled with a same-sex friend, had a father

who was working outdoors, had problems at school, and showed a negative outlook on the future. It may be noted here that, contrary to expectations, the attribution question failed to enter the regression equation. And finally, higher levels of negative views on being alone were found in subjects who had argued with same-sex friends, were members of a formal youth movement, and more importantly, who attributed their being alone to other people.

In all, some promising validity data have been collected for all four scales. A set of social, ecological, and intrapersonal variables thought to be related to subjects' experience of loneliness accounted for 10–30% of the variance in the loneliness and aloneness scores. The overall trend in the data, i.e., that peer-related loneliness can be accounted for more easily and that social integration in the peer group is most predictive of all aspects of loneliness and aloneness, replicates the findings of earlier studies in which unidimensional loneliness measures have been used. Goswick and Jones (1982), e.g., found in a group of high-school students that all but one of the variables entering the equation to predict loneliness were peer related. In addition, the present study calls attention to psychological factors, in particular, to such general aspects as subjects' outlook on the future.

DISCUSSION

This study set out to reach three objectives: (a) to develop an internally consistent loneliness measure of a multidimensional nature, (b) to explore age and sex differences in loneliness from pre- through late adolescence, and (c) to provide preliminary validity data for the multidimensional loneliness measure.

With regard to the first objective, a psychometrically sound loneliness measure now seems available for use with younger age groups. The instrument is a consequent elaboration of the social psychological (or relational) view on loneliness and addresses important aspects of the related experience of aloneness. This width in scope stands out as a particular feature of the instrument.

This is not to say, however, that the four scales are to be considered definitive. Instead, many refinements could be envisaged. Schmidt and Sermat's (1983) study on adults may serve as a starting point here. These authors devised subscales to measure loneliness in friendship relations and in the larger group. Both aspects seem represented within our peers scale, as it currently stands. Because the distinction between the friendship dyad and the larger context of the peer group has long been considered most important among students of adolescent development (Serafica and Blyth, 1985), the construction of analogous scales for use with adolescents seems highly advisable in-

deed. In addition, a romantic/sexual loneliness subscale could be developed for use with older adolescents. This scale would then deal with the relational provisions offered by members of the opposite sex, or lack thereof (see Weiss, 1973). Likewise, a set of reliable subscales could be devised to measure the various aspects of the aloneness scales, i.e., evaluation, attribution, and coping.

In spite of these excellent psychometric properties and promising extensions, the expectations on age and sex differences in adolescent loneliness have not been confirmed. At first glance, these negative results seem to represent a serious threat to the viability of the relational approach to adolescent loneliness. However, the hypotheses stated in the introduction to this paper may have been somewhat naive. Indeed, the family may grow less important as a context of reference for adolescents' behavior when they become more strongly involved in the peer group. But this does not imply that parents disappear from the relational scene altogether. Rather, specific relational demands—for guidance, support, or consolation—are still placed on parents of adolescent boys and girls. In fact, evidence is now accumulating that both parental and peer relations serve important yet distinct functions from pre- through late adolescence (Cooper and Ayers-Lopez, 1985; Hunter and Youniss, 1982; Youniss, 1980).

Our data seem to present a particular instance of this continuing need for and importance of parental attention. The sudden drop in parent-related loneliness at seventh grade, already discernible in the Marcoen and Brumagne (1985) study, may best be explained as a result of heightened parental involvement with their offspring. In the Belgian school system, this period marks the transition from primary to secondary education, which involves drastic changes in school environment. In this transitional period parents may pay more attention to their children's academic progress, thereby meeting their relational demands. Interestingly, this hypothesis would explain the marginally significant finding that students who change school experience lower levels of parent-related loneliness.

As adolescents move on to higher grades, parental attention diminishes gradually. And the overall stability or slight increase in parent-related loneliness may be at least partly attributable to this parental withdrawal and to continuing adolescent demands. Similarly, the decrease in peer-related loneliness may simply mean that adolescents' growing capacity and demands for intimacy (Berndt, 1982) are increasingly met. It is hoped that the growing body of research on both parental and peer relations in adolescence (Blyth and Serafica, 1985; Montemayor and Adams, 1985) will provide more subtle predictions for age and sex differences in parent- and peer-related loneliness. The tentative hypotheses on adolescents' evaluation of aloneness may have to be altered or diversified in comparable ways. Meanwhile, the present find-

ings on seventh graders may serve as both a plea for caution and a source of inspiration.

With regard to the third objective, finally, some caution is in order, too. Loneliness scores have successfully been predicted by means of a set of selected social, ecological, and personal variables. The validity of the peer-related loneliness scale seems to be well established. Many aspects of subjects' social integration and relationships with peers proved to be effective predictors of this type of loneliness. In addition, intrapersonal or psychological factors do predict subjects' scores on the peers scale. The validity of the parent-related loneliness scale is somewhat more problematic. Family factors almost completely failed to predict subjects' scores on this scale. However, there are some validity indices in the intrapersonal and psychological domain that warrant further use of the parents scale.

In regard to the validity of the aloneness scale, much additional research seems needed. Judging from the results in the intrapersonal domain, these scales and the negative evaluation scale in particular seem to probe for subjects' attribution and evaluation of aloneness. In addition, some promising findings in the social realm should be noted. Whether the scales probe for the coping styles associated with these evaluative stances is a question to be addressed in future research.

Evidently, much additional work is needed on the concurrent validity of these scales. In particular, we need more data on the specific relational functions being tapped by the parents and peers scales. This imperative is particularly compelling if we want to outline a developmental framework for age and sex differences in adolescent loneliness. The aloneness scales, too, are in need of additional evidence for much the same reason. Therefore, correlational studies that address the complex matter of construct validity seem to rank among the first objectives for future research.

In summary, a set of subscales has been devised for the assessment of loneliness and aloneness in adolescence. As a whole, they make up a multidimensional measure covering a more comprehensive range of feelings and behaviors associated with loneliness and aloneness than any other existing instrument. While exhibiting good internal consistency and factorial independence, much additional research is needed on the construct validity of the scales. This type of research, then, may help clarify the confused findings on age and sex differences in loneliness in this particular portion of the life span.

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APPENDIX. The Louvain Loneliness Scale for Children and Adolescents[a]

Item	Factor I	II	III	IV
L-PEER				
4. I think I have fewer friends than others.	.62	−.06	−.03	.09
5. I feel isolated from other people.	.50	−.16	−.01	.23
7. I feel excluded by my classmates.	.64	−.15	.08	.11
9. I want to be better integrated in the class group.	.60	−.05	.09	.01
15. Making friends is hard for me.	.45	−.15	.00	.18
17. I am afraid the others won't let me join in.	.60	−.01	.16	.21
23. I feel alone at school.	.46	−.12	−.02	.14
27. I think there is no single friend to whom I can tell everything.	.50	−.05	−.03	.14
33. I feel abandoned by my friends.	.66	−.03	.18	.12
35. I feel left out by my friends.	.64	−.01	.15	.18
41. I feel sad because nobody wants to join in with me.	.53	.00	.25	.19
47. I feel sad because I have no friends.	.56	−.08	.11	.10
L-PART				
−1. I feel I have very strong ties with my parents.	.06	.70	−.01	−.00
−3. My parents make time to pay attention to me.	−.08	.62	−.16	−.04
11. I feel left out by my parents.	.21	−.51	.10	.27
−16. I find consolation with my parents.	.06	.72	.03	−.09
18. I find it hard to talk to my parents.	.16	−.46	.11	.30
−25. I can get along with my parents very well.	−.05	.68	−.05	−.11
−30. My parents are ready to listen to me or to help me.	−.15	.67	.03	−.04
−37. I have the feeling that my parents and I belong together.	.02	.60	.11	−.06
−38. My parents share my interests.	−.11	.60	−.03	−.00
−43. My parents show real interest in me.	−.10	.64	−.01	.03
45. I doubt whether my parents love me after all.	.18	−.56	.07	.17
−48. At home I feel at ease.	−.02	.54	−.07	.04
A-NEG				
8. When I am lonely, I feel bored.	.14	−.04	.50	−.19
10. When I am alone, I feel bad.	.37	.06	.39	−.05
12. When I feel lonesome, I got to see some friends.	−.32	−.05	.57	.11
14. When I feel bored, I am unhappy.	.23	−.07	.40	.05
20. When I am lonely, I don't know what to do.	.24	.01	.53	−.09
22. To really have a good time I have to be with my friends.	−.04	−.07	.44	.00
24. When I am lonely time lasts long and no single activity seems attractive.	.24	−.06	.52	.04
29. When I am alone, I would like to have other people around.	.12	−.04	.67	−.09
32. When I am bored I go to see a friend.	−.41	−.04	.58	.15
34. I feel unhappy when I have to do things on my own.	.24	−.03	.44	.06
39. When I am lonely I go to see other people myself.	−.31	.00	.54	.07
42. When I am bored, I feel lonesome.	.23	−.01	.56	.06
A-POS				
2. I retire from others to do things that can hardly be done with a large number of people.	.09	−.05	−.01	.31
6. I want to be alone.	.12	−.13	−.19	.45
13. I am looking for a moment to be on my own.	.06	−.04	−.08	.57
19. When I am lonely, I want to be alone to think it over.	.15	−.16	.15	.51

APPENDIX. Continued

Item	Factor I	II	III	IV
21. When I have an argument with someone, I want to be alone to think it over.	.18	−.03	.16	.42
26. When I am alone, I quiet down.	.05	.08	−.03	.47
28. To think something over without uproar, I want to be alone.	.11	−.06	.24	.51
31. I am happy when I am the only one at home for once, because I can do some quiet thinking then.	.04	−.14	.03	.50
36. I want to be alone to do some things.	.15	−.04	.02	.56
40. I retire from others because they disturb me with their noise.	.27	.04	.10	.42
44. Being alone makes me take up my courage again.	.06	−.02	−.09	.49
46. At home I am looking for moments to be alone, so that I can do things on my own.	.09	−.12	−.09	.67

[a]Factor loadings—Varimax rotation (N = 444). Numbers refer to actual order of appearance in the questionnaire. Items keyed in reverse direction are preceded by a minus sign.