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Adolescent self-disclosure and loneliness: Private self-consciousness and parental influences

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Loneliness has been recognized for some time as a persistent and serious social problem. Feelings of remoteness and isolation from others occur in a substantial portion of the American populace (Bradburn, 1969; Rubinstein, Shaver, & Peplau, 1979) and such self-reported loneliness has been found to have a host of negative correlates, including anxiety, depression, self-derogation, feelings of hopelessness, and alienation (e.g.,

1979; Russell, Peplau, & Cutrona, 1980; Russell, Peplau, & Ferguson, 1978). In light of these findings, a systematic study of loneliness has recently begun.

Some of this research has linked feelings of loneliness to the quantity of one's social interaction (Brennan, 1982; Jones, Hansson, & Smith, 1980; Russell et al., 1980), with lonely respondents indicating that they dated less frequently, spent more time alone, and engaged in fewer social activities than nonlonely respondents. Results from other investigations, however, indicate that the *quality* of social interaction is a more potent influence on feelings of loneliness (Chelune, Sultan, & Williams, 1980; Jones, 1981; McCormack & Kahn, 1980). Evidence from the latter investigations supports a view that lonely and nonlonely people engage in roughly equivalent amounts of interaction with others, but that for lonely persons these interactions may occur less with intimate friends and family, and more with acquaintances and strangers (Jones, 1981). Thus the phenomenological experience of loneliness appears to be at least as much a function of the intimacy and privacy of one's social intercourse as the sheer quantity of time spent in the presence of others.

What aspects of social intercourse might specifically affect feelings of loneliness? Chelune et al. (1980) hypothesized that willingness to self-disclose, which has been implicated as a factor influencing relationship intimacy, would be related to degree of reported loneliness. As predicted, these investigators found that for unmarried college women there was a significant relationship between reported loneliness and willingness to self-disclose to others, as assessed by the Self-Disclosure Situations Survey (SDSS; Chelune, 1976). Loneliness in this investigation was not associated with overall level of social activity. One aspect of this research worth mentioning is that the self-disclosure measure used (the SDSS) deals only with hypothetical situations; that is, no measure of reported intimacy in actual self-disclosure with friends or family was used.

Berg and Peplau (1982), who also used a college sample, assessed the relations among loneliness, actual past disclosure (using the Miller Topics Inventory), and willingness to disclose (SDSS). For male subjects, no relations were found between either of the disclosure indexes and loneliness. For female subjects, however, loneliness was again significantly associated with less willingness to disclose, and was also associated with less actual disclosure to same-sex friends. No relation was found between loneliness and disclosure to opposite-sex friends. Solano, Batten, and Parish (1982) also investigated the association of loneliness and self-disclosure in college students. They found that whereas past self-disclosure to parents was unrelated to loneliness, past disclosure to peers was related. The reported loneliness of female respondents was significantly related to degree of self-disclosure to both same-sex and opposite-sex friends. Male subjects' loneliness was related only to opposite-sex self-disclosure. In all cases, less intimate disclosure to peers was associated with more reported loneliness.

In summary, then, for women the loneliness-disclosure link is well supported. In only one case (Berg & Peplau, 1982) did women fail to display a significant association (and only for opposite-sex targets). For men the link between loneliness and self-disclosure is weak. Only Solano et al. (1982) found a significant relation, and then only for opposite-sex disclosure targets. The Solano et al. (1982) investigation also indicated that it is disclosure to peers, and not parents, that is associated with less loneliness. This pattern makes a good deal of intuitive sense. Given the considerable pressure at this time of life (late adolescence) to be popular and “one of the crowd,” it would be surprising if intimacy of self-disclosure to peers did not have more effect on loneliness than self-disclosure to parents. Indirect evidence supporting the Solano et al. (1982) results also comes from a recent study (Goswick & Jones, 1982) in which questionnaires, designed to tap feelings, attitudes, and experiences that might be associated with loneliness, were administered to college and high school students. For both high school and college samples, the vast majority of feelings and attitudes associated with loneliness had to do with peer relations, whereas relatively few had to do with parents, family, or school. Thus the widely acknowledged importance of peer relationships and peer evaluation during adolescence seems to be crucial for influencing feelings of loneliness.

Antecedents of Self-Disclosure

Given the evidence thus far for a link between self-disclosure and loneliness, an important question becomes, "what are the antecedents of intimate self-disclosure?" If loneliness is indeed associated with superficial disclosure of self, what factors predispose one to disclose more or less intimately? Archer (1979) reviewed a number of attempts to answer this question, and reached the conclusion that a "hazy, confused portrait is all that can be distilled from some twenty years of research" (p. 38). On the basis of his review, Archer concluded that intimate disclosers tend to be women, tend not to be introverts, and are not likely to be neurotic. Beyond this, little can be said with much confidence. Attempts have been made to link self-disclosure with constructs such as dogmatism, field dependence-independence, social desirability, and mental health (via the Minnesota Multiphasic Personality Inventory); these efforts have met with varying degrees of success (Archer, 1979). Since this 1979 review, Berg and Peplau (1982) have reported some association of loneliness and psychological masculinity and femininity, with higher masculinity *and* femininity scores each generally associated with less loneliness.

Two personality characteristics that have not received attention as potential influences on self-disclosure are the individual's dispositional levels of self-consciousness and perspective-taking tendency. *Private self-consciousness* refers to the dispositional tendency to focus attention on the more private and covert aspects of oneself. These aspects can include one's internal emotional states, motives, and reflections about past experiences. The effect of such self-focused attention is said to be a "clearer and more distinct" knowledge of oneself (Buss, 1980). Franzoi (1983) and Turner (1978), for example, found that individuals who scored high in private self-consciousness listed more self-descriptive adjectives when describing themselves than did those who did not typically self-reflect, suggesting that the former individuals have more self-information available. Regarding self-report accuracy, Scheier, Buss, and Buss (1978) found the correlation between self-reports of aggressiveness and aggressive behavior to be significantly greater for subjects scoring high than for subjects scoring low in private self-consciousness. Bernstein and Davis (1982) found that after observing target persons who were high and low in private self-consciousness, subjects were better able to match the former group with their self-descriptions than the latter group. Finally, in a study of self-friend evaluations (Franzoi, 1983), the self-descriptions obtained from individuals high in private self-consciousness were found to be more in line with their close friends' evaluations of them than were the self-evaluations of persons low in self-consciousness. On the basis of these studies, one can conclude that high levels of private self-consciousness is associated with a better, more detailed, and more accurate knowledge of internal self-aspects. Because the content of this self-awareness (emotions, thoughts, aspirations, and doubts) is typical material for intimate self-disclosure, persons possessing such detailed and accurate self-knowledge seem to be better equipped to self-disclose, whereas persons lacking such elaborate self-knowledge would be less able to share personal information with others. Thus we predicted that higher levels of private self-consciousness would generally be associated with greater self-disclosure with peers.

A second personality variable that may be related to self-disclosure is the individual's perspective-taking tendency. *Perspective taking* refers to the tendency of an individual to entertain the psychological point of view of another person—that is, to put aside temporarily one's own perspective and attempt to adopt that of another (Davis, 1980, 1983). Someone willing and able to see things from another person's point of view should be better able to anticipate others' feelings, needs, and behavior, and thus minimize interpersonal friction. Davis (1983) reported associations between a measure of perspective taking and measures of social competence that support this view. More important, Miller, Berg, and Archer (1983) have recently found that higher perspective-taking scores are significantly associated with being the recipient of intimate self-disclosure. This makes sense, because the considerate social style of perspective takers probably invites disclosure. The fact that perspective takers tend to invite self-disclosure from others has relevance for the present study because of the norm of

reciprocity: the fact than when one member of a dyad self-discloses, the other is likely to respond in kind (e.g., Cohn & Strassberg, 1983; Savicki, 1972). Thus in the present study we predicted that perspective taking, like private self-consciousness, would be associated with more intimate self-disclosure with others.

Model of Loneliness, Self-Disclosure, and Antecedent Factors

From the preceding discussion, we can formulate an initial model to describe the relation that for adolescents should exist between loneliness, self-disclosure to peers and parents, and antecedent factors (such as personality variables) that affect self-disclosure. In Figure 1 we display this general model. The endpoint of this model is the subjective state of loneliness. The variables immediately preceding loneliness in the model are self-disclosure to mother, father, and peers. We anticipated, on the basis of previous research (Goswick & Jones, 1982; Solano et al., 1982), that disclosure to mother and father would be unrelated to self-reported loneliness, but that self-disclosure to peers would be negatively related. Preceding each of the self-disclosure variables in the model are two antecedent factors thought to be particularly important in affecting self-disclosure to that target. For disclosure to peers, the antecedent variables are the previously described personality traits of private self-consciousness and perspective-taking tendency; we predicted that both would foster greater self-disclosure. Immediately before the two parental self-disclosure variables are the reported warmth and educational level of that parent. Heller (1972), Miller et al. (1983), Pope and Siegman (1968), and Taylor, Altman, and Sorrentino (1969) found that warmth of the self-disclosure partner is associated with greater disclosure, and we predicted that it would have a similar effect here. Educational level of the parent is included as an indicant of his or her social class background. Although educational level is an admittedly imperfect measure of social class, it has been a standard indicant used by researchers studying the topic (e.g., Davies & Kandel, 1981). Differences between the child-rearing behavior of lower- and middle-class parents are well documented (e.g., Hoffman, 1970; Keller, 1976), and we expected that better educated parents, because of a hypothesized tendency to have more egalitarian, less authoritarian relationships with their children, would engage in more intimate disclosure with their children.

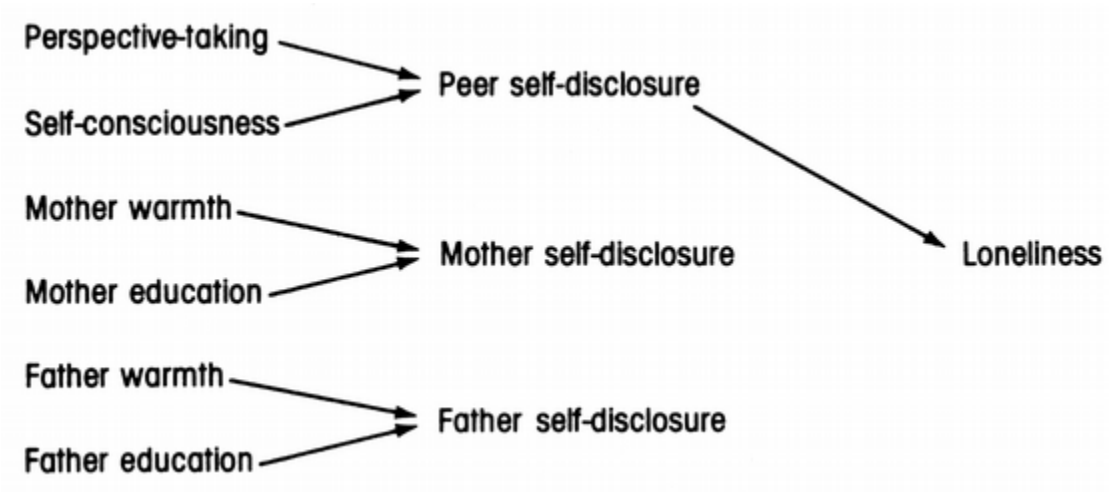

Figure 1. Original model linking loneliness, self-disclosure, and antecedent variables

Although we believed this general model would accurately describe the relations among the measured variables for all subjects, there were some differences between male and female subjects that were expected. First, it seemed probable that disclosure to peers would have a larger effect on loneliness among women than among men. In our society, women are expected and encouraged to disclose more intimate, personal details about themselves than are men (Peplau & Gordon, in press). Because of this sex-based role expectation, a *failure* to reveal personal intimacies in relationships should have more serious consequences for women's feelings of isolation from others. In short, levels of intimacy with peers should be more strongly associated with loneliness for

women than for men. The empirical evidence advanced earlier (Berg & Peplau, 1982; Chelune et al., 1980) supports this view.

Second, because the societal pressure to have close peer relationships is stronger for women, personality characteristics such as private self-consciousness and perspective taking may be less potent influences on women than on men. That is, the social forces that act to encourage intimate relationships for women may obscure or overwhelm the influence of individual difference variables; because men are less pressured to have such intimate contact, individual variation in psychological characteristics may have more of an opportunity to affect their levels of self-disclosure. Thus the paths from personality variables to peer disclosure should be stronger for men, and the paths from peer disclosure to loneliness should be stronger for women.

Method

Sample

Participants were 442 high-school students (226 male and 216 female) from a small city (population approximately 8,000) in Michigan's upper peninsula. Parental permission was obtained for all students who were administered the survey. Sixteen percent of the 528 students in the four-grade school system did not participate in the study because of either absence from school on the day the survey was administered, class schedule conflicts, or parental objection (approximately 8% of the nonparticipants). Of the students who participated in the study, 21% were not included in the subsequent data analysis because they did not answer all relevant questions on the survey. The final subject pool consisted of 177 male subjects and 173 female subjects, average age 16 years. Questionnaires were completed by the students in the classroom during the normal 55-min periods.

Questionnaire

In the survey booklet, students were asked to provide biographical information concerning their age, sex, grade in school, and parents' educational background (i.e., less than high-school degree; high-school graduate; some college, but no degree; college graduate; graduate, medical, law school). As a measure of perceived parental warmth, students were asked to evaluate their current relationship with both mothers and fathers, using separate 5-point Likert scales (from 1 = *hostile, rejecting* to 5 = *warm, loving*). In addition, the questionnaire contained a number of items not relevant to the present investigation.

The two personality variables of interest were private self-consciousness and perspective-taking tendencies. We measured private self-consciousness with the 10-item private self-consciousness subscale of the Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975), and we measured perspective taking with the 7-item perspective-taking subscale of the Interpersonal Reactivity Index (IRI; Davis, 1980). The private self-consciousness subscale has been widely used in recent years, and greater self-consciousness has been linked to a number of theoretically relevant constructs, such as more detailed self-knowledge (Franzoi, 1983; Turner, 1978) and greater correspondence between self-report and behavior (e.g., Scheier et al., 1978). The perspective-taking (PT) subscale was developed more recently, and constitutes one portion of a multidimensional measure of empathy (the IRI). Davis (1980), in describing the development of this measure, reports that the PT subscale has adequate internal reliability (α = .75 for men and .78 for women), with recent investigations providing evidence of its validity. For example, Davis (1983), drawing on traditional theoretical treatments of perspective taking as a fundamental social skill (Mead, 1934; Piaget, 1932), predicted that the PT scale would be related to a number of measures of interpersonal functioning. Consistent with this expectation, greater perspective taking was found to be consistently associated with several measures of social competence. As expected, scores on the PT subscale were also positively related to self-esteem, and were relatively unrelated to measures of emotionality. In a laboratory context, Bernstein and Davis (1982) found that high scorers on the PT subscale were more successful in matching other persons with their self-descriptions. Such success represents a type of accuracy—one involving

the ability to perceive how others view themselves—that on theoretical grounds should also be related to the tendency to adopt others' psychological perspectives. Thus the available evidence supports the view that the PT subscale is indeed a reliable measure of the individual's tendency to spontaneously adopt the psychological point of view of others.

Because of space considerations in constructing the questionnaire, we measured degree of current self-disclosure to mother, father, and friend(s) with four items ("What is important to me in life," "What I like and dislike about myself," "My worst fears," and "Things I have done which I feel guilty about"), selected from the Self-Disclosure Index (SDI, Miller et al., 1983). Using a 5-point scale from 1 (*Discuss not at all*) to 5 (*Discuss fully and completely*), subjects indicated the extent of their current disclosure to each of the three targets for each of the four topics. Miller et al.'s (1983) factor analysis of the full 10-item SDI revealed that all items loaded on a single factor for both male and female subjects. The internal consistency of the SDI was high (Cronbach's alpha = .87 for men, .86 for women), and the index was substantially correlated with the Jourard (1964) Self-Disclosure Questionnaire (r = .49 for men, .65 for women). Miller et al. (1983) found that subjects scoring high on the SDI reported more actual disclosure to others than subjects scoring low on the index. In our study, separate factor analyses of the shortened SDI were initially conducted for male and female subjects, resulting in single factor loadings (eigenvalue criterion > 1.00) across the three target groups. When male and female responses were combined, single factor solutions again resulted for all target groups. To determine the relation between the 10-item SDI and the shortened index used in our study, we administered the SDI to 134 college students (60 male, 74 female), with "friends" being the target population, and a score was then computed for each subject on the long and short versions of the SDI. Correlations between the long and short form were extremely high (r = .94 for men, .89 for women), indicating that the shortened Self-Disclosure Index is an adequate substitute for the longer SDI.

Degree of loneliness was assessed by using the four-item short version of the UCLA Loneliness Scale (Russell et al., 1980), which consists of two positively worded items ("I feel in tune with the people around me" and "I can find companionship when I want it") and two negatively-worded items ("No one really knows me well" and "People are around me but not with me"). Russell et al. (1980) recommended this shortened version of the UCLA Loneliness Scale in survey research. Using optimal subset regression techniques, those investigators selected four items from the longer scale (that of Russell et al., 1978) that best predicted scores on the loneliness self-labeling index. This four-item loneliness scale had a coefficient alpha of .75 in their study. Furthermore, in our own sample of 134 college students (60 male and 74 female), the correlation between the short and long version of the UCLA Loneliness Scale was high (r = .61 for male subjects, .70 for female subjects), indicating that the short version is an adequate substitute for the longer UCLA Loneliness Scale.

Model Estimation

We estimated the models in this investigation using LISREL V (Joreskog & Sorbom, 1981), a technique that yields maximum likelihood estimates, and a chi-square goodness-of-fit test, which allows an evaluation of the fit between the covariance matrix implied by a model and the matrix we actually observed. Thus, unlike values of the test statistic used to reject a null hypothesis, the *smaller* the chi-square is relative to its degree of freedom, the better is the fit. In addition, it is possible to compare the adequacy of two models by determining the significance of the difference in chi-squares, provided that one model is nested (i.e., is a special case of the other).

Results

Sex Differences

The means, standard deviations, and correlations among the variables are shown separately for male and female subjects in Table 1. One-way analyses of variance revealed that male and female respondents differed significantly with respect to several of the variables in the model. Female subjects had higher scores on both personality measures—perspective taking: $F(1, 348) = 24.32$, $p < .001$; private self-consciousness: $F(1, 348) = 7.56$, $p < .01$—but no differences were found for the reported warmth of either father or mother (Fs < 1). Male subjects did report slightly higher educational levels for both parents, $F(1, 348) = 5.55$, $p < .02$, for mothers' education; $F(1, 348) = 3.77$, $p < .06$, for fathers' education. Because it is unlikely that such a difference actually exists, we suspect that our finding is due to exaggeration by some male respondents. In any event, the differences are small and irrelevant to the more important questions concerning relations among variables. Finally, there was a weak tendency for male subjects to report more loneliness than female subjects, $F(1, 348) = 3.31$, $p < .10$.

Table 1
Means, Standard Deviations, and Correlations of Variables

Variable	1	2	3	4	5	6	7	8	9	10	*M*	*SD*
Female subjects												
1. Loneliness	1.00	−.27**	−.09	−.09	−.17**	−.03	−.15*	−.12	−.14*	.01	1.93	0.48
2. Peer self-disclosure		1.00	.36**	.35**	.19**	.16*	.14*	.07	.16*	−.03	3.47	0.84
3. Mother self-disclosure			1.00	.50**	.08	.08	.42**	.01	.13*	.05	2.90	1.09
4. Father self-disclosure				1.00	.10	−.04	.16*	.06	.52**	.18**	2.42	1.08
5. Perspective taking					1.00	.23**	.05	.06	.14*	−.09	3.48	0.66
6. Private self-consciousness						1.00	.09	.17**	.08	.09	3.56	0.51
7. Mother warmth							1.00	.00	−.35**	.00	4.26	0.95
8. Mother education								1.00	.00	.47**	2.61	1.00
9. Father warmth									1.00	.03	3.94	1.08
10. Father education										1.00	2.72	1.12
Male subjects												
1. Loneliness	1.00	−.11	−.11	−.03	.03	.01	−.25**	−.01	−.18**	.01	2.04	0.53
2. Peer self-disclosure		1.00	.44**	.29**	.17**	.34**	.18**	.12	.10	.12	2.93	0.90
3. Mother self-disclosure			1.00	.49**	.04	.13*	.41**	.19**	.16*	.13*	2.61	0.98
4. Father self-disclosure				1.00	.19**	.09	.18**	.12	.38**	.13*	2.51	1.05
5. Perspective taking					1.00	.32**	−.03	.09	.00	.15*	3.13	0.63
6. Private self-consciousness						1.00	.03	−.03	−.10	.05	3.40	0.55
7. Mother warmth							1.00	.03	−.48**	.04	4.24	0.87
8. Mother education								1.00	.02	.46**	2.88	1.13
9. Father warmth									1.00	.00	3.90	1.02
10. Father education										1.00	2.96	1.17

Note. All correlations are based on *n*s of 173 for female subjects and 177 for male subjects. All variables consisting of responses to multiple items are divided by the number of items to produce an average item score (for example, the total score for the 10-item self-consciousness scale is divided by 10, and so forth).
* $p < .05$. ** $p < .01$.

Means, Standard Deviations, and Correlations of Variables

With regard to the disclosure indexes, as expected, female subjects reported more intimate levels of self-disclosure than did male subjects with peers, $F(1, 348) = 33.59$, $p < .001$, and with mothers, $F(1, 348) = 9.38$, $p < .01$, but no significant differences appeared for disclosure to fathers ($F < 1$). Comparisons among the three disclosure indexes revealed that for female subjects, disclosure was more intimate with peers than with mothers, $t(172) = 7.69$, $p < .001$, and more intimate with mothers than with fathers $t(172) = 5.30$, $p < .001$. For male subjects, disclosure was more intimate with peers than with either mother, $t(176) = 6.26$, $p < .001$, or father, $t(176) = 5.41$, $p < .001$, but levels of disclosure with mother and father were virtually identical ($t < 1$).

Estimating the Model

To test the adequacy of our general model (Figure 1), we used a simultaneous groups analysis in LISREL V. In this procedure, we attempt with the program to reproduce the observed covariance matrix for female and male subjects simultaneously, thus testing the notion that the same theoretical model (Figure 1) accounts equally well

for the data of male and female subjects. In this initial analysis all the estimated paths were constrained to be equal for each sex. The results are shown in Figure 2.

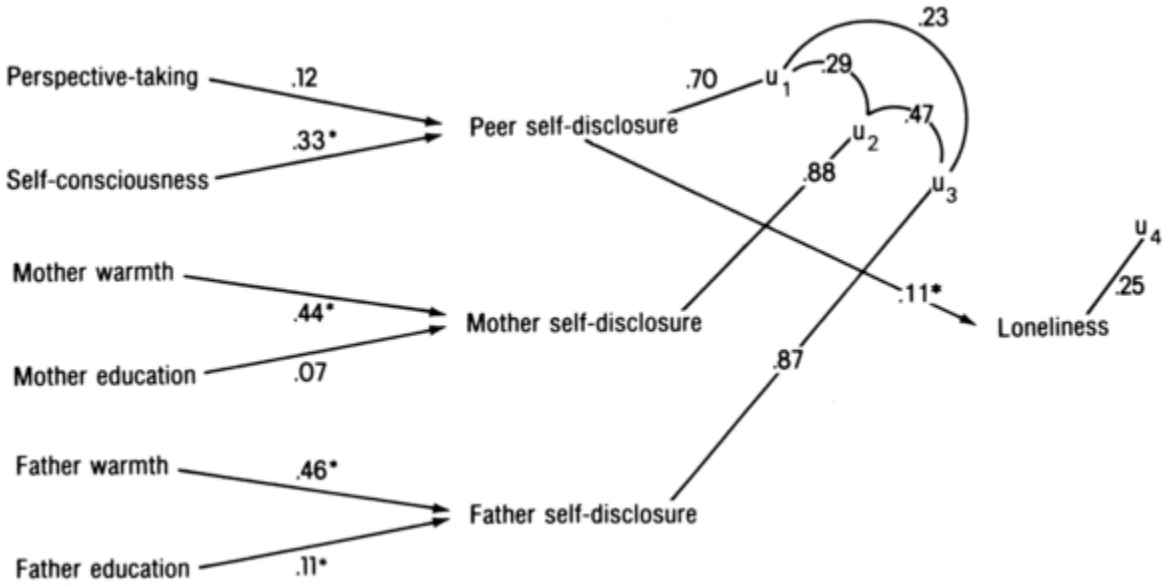

Figure 2. Results for the baseline model. [All path coefficients constrained to be equal for male and female subjects. χ2(54, N = 350) = 78.92, p = .015, goodness-of-fit index = .921. An asterisk indicates that the path coefficient is significant at p > .05.]

The overall fit of the model—a model in which all the relations among variables are constrained to be equal for male and female subjects—is reasonably good, $\chi^2(54, N = 350) = 78.92$, $p = .015$. The probability level associated with this chi-square was less than .05, which indicates that the covariance matrix produced using our theoretical specifications was significantly different from the observed covariances. However, because the chi-square statistic is notoriously sensitive to factors other than the observed/theoretical fit, particularly size of the sample (Bentler & Bonett, 1980; Burt, 1973; Joreskog, 1969), researchers often assess goodness of fit by examining the ratio of the chi-square value to the degrees of freedom for that value (Alwin & Jackson, 1980; Bohrnstedt, 1983). The closer this ratio is to unity, the better the fit of the model is to the data. In this case that ratio was 1.46, indicative of a good fit. A recently developed statistic provided by the LISREL V program is the goodness-of-fit index (GFI), which also produces an estimate of how well the model fits the observed data matrix; the GFI, however, is not sensitive to sample size. This index can take on values from zero to one, with higher values indicating a better fit. The GFI value for the general model was .921.

Our next step in analysis was to compare the fit (as represented by the chi-square) of this baseline model with a second model in which three of the estimated paths were allowed to differ for male and female subjects. Specifically, in the second model the paths from perspective taking and private self-consciousness to peer self-disclosure and from peer self-disclosure to loneliness were allowed to hold different values for each sex. We had previously predicted that the size of these paths would be different for male and female subjects. As in the general or baseline model, all other paths were constrained to be identical across groups. A comparison of the fit of this model with that of the baseline model provides an assessment of the improvement in the fit of the model, which results from our assumption regarding sex differences. If allowing the sexes to differ on these paths provides a significant improvement in chi-square over the baseline model, this is evidence supporting our hypotheses regarding sex differences. The results of this model appear in Figure 3.

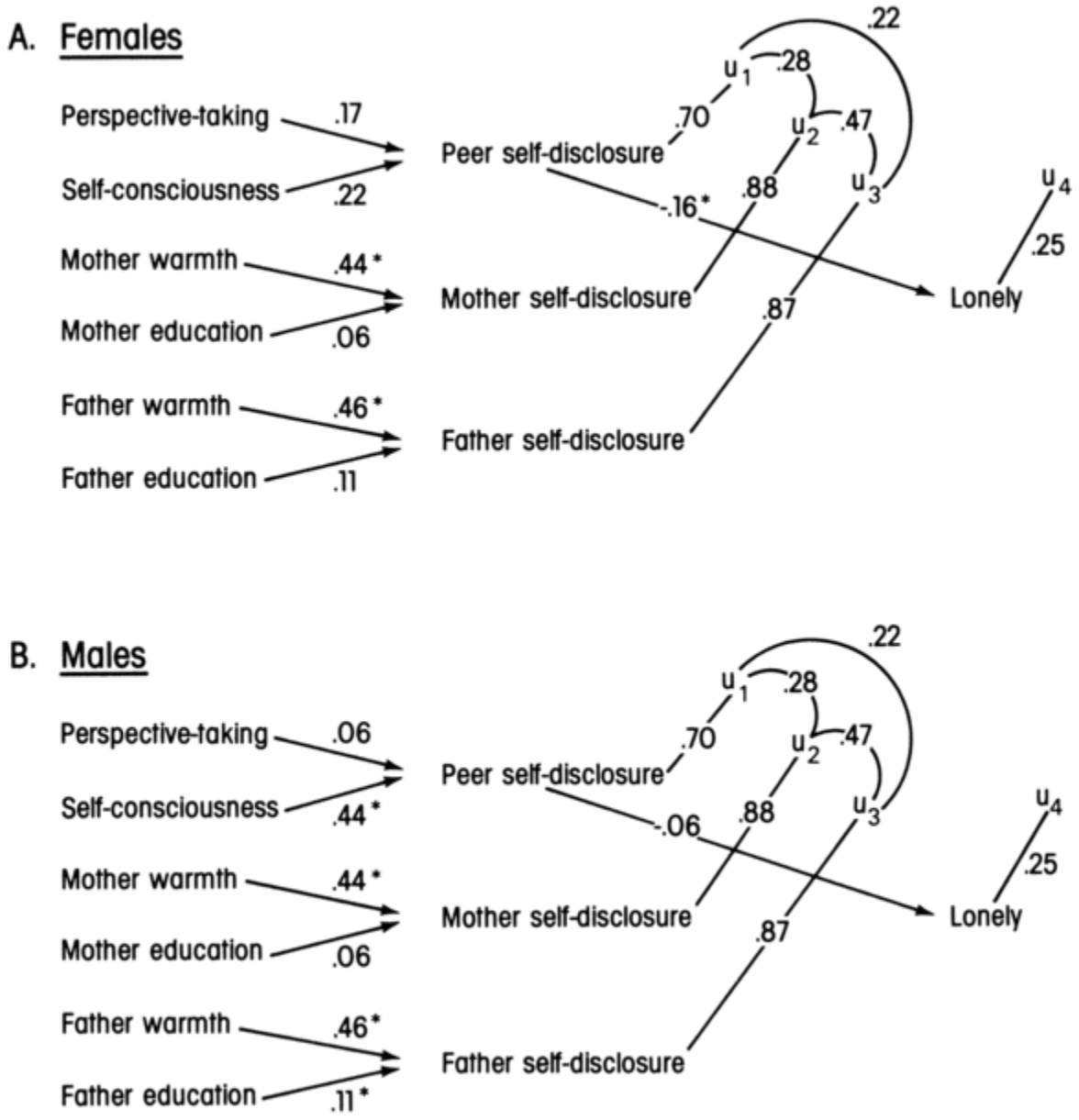

Figure 3. Results for Model 2, testing hypothesis of sex differences. [χ2(51, N = 350) = 74.54, p = .017, goodness-of-fit index = .921. An asterisk indicates that the path coefficient is significant at p < .05.]

The fit of Model 2 is slightly better than that of the baseline model, $\chi^2(51, N = 350) = 74.54$, $p = .017$, GFI = .921. As expected, the path from peer self-disclosure to loneliness was stronger for female subjects (−.16) than for male subjects (−.06), and was significant for the former group but not the latter. Also, as expected, the paths from personality variables to peer self-disclosure were nonsignificant for female subjects (although they approached significance: both *p*s < .10); for male subjects, private self-consciousness was strongly related to peer self-disclosure, whereas perspective taking was not. However, the improvement in fit afforded by Model 2 was a small one, and the test for differences between the chi-square values of the two models revealed a nonsignificant improvement, $\chi^2(3, N = 350) = 4.38$, $p > .20$. Thus although male and female subjects did appear to differ somewhat in the predicted fashion, these differences were not large enough to achieve statistical significance.

The final step in the analysis was to examine our model to determine which part of it fit least well with the observed data. To attain this goal, we used a diagnostic statistic provided by the LISREL V program: the modification index (MI), which provides information regarding portions of the model that are not estimated (i.e., paths that are constrained to be zero). The MI indicates which of these nonestimated terms is likely to have the largest effect on the overall fit of the model if it were to be estimated. Thus it provides a clue as to which part of the theoretical model fits least well with the observed data. The largest MI value in the baseline model was that associated with the path, for male subjects, between mother warmth and loneliness. According to this index, inclusion of such a path would provide the single biggest improvement in the fit of our baseline model. Accordingly, we next reestimated that model, allowing now for a direct path between mother warmth and loneliness for male subjects only. These results appear in Figure 4.

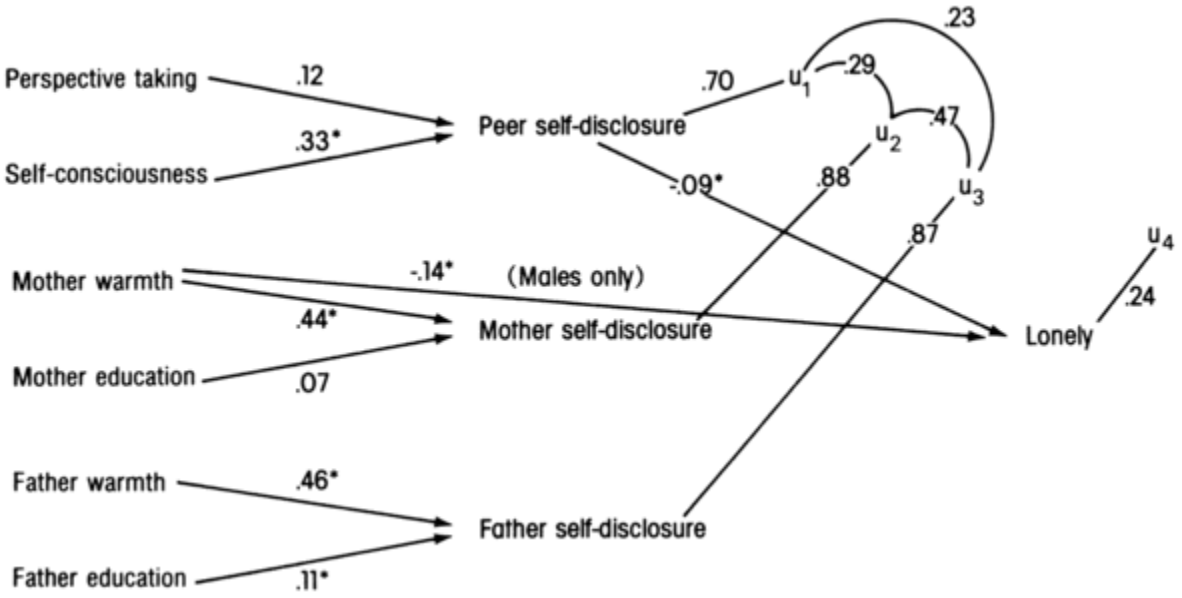

Figure 4. Results for Model 3, allowing path from mother warmth to loneliness for male subjects. [χ2(53, N = 350) = 68.90, p = .07, goodness-of-fit index = 939. An asterisk indicates that the path coefficient is significant at p < .05.]

The fit of this model (Model 3) is better than the baseline model, $\chi^2(53, N = 350) = 68.90$, $p = .07$, GFI = .939, and the improvement in fit resulting from the addition of this one path for male subjects is highly significant, $\chi^2(1, N = 350) = 10.02$, $p < .005$. Thus, through the addition of only one new path for one sex only, and while we constrained all other paths to be equal, we obtained a significant improvement in fit.

Discussion

The results indicate that our general theoretical model is largely correct, with the hypothesized relations between the variables providing a relatively good reproduction of the students' actual responses. It is of course possible that by freeing up a few more paths between variables we could have improved still further the fit of the model, but this type of post hoc curve fitting was not our objective. Our stated objective was to test a theoretically derived general model in which antecedent personality and parental variables were predicted to affect peer and parental self-disclosure, with peer self-disclosure then affecting experienced loneliness. The successful fit of this model to responses from both male and female subjects attests to the general soundness of the study's theoretical foundation. Although these findings may be safely generalizable to American adolescents, it is presently less clear whether this model applies to different age or cultural groups.

Variables Affecting Self-Disclosure

Personality variables

As predicted, the more privately self-conscious subjects reported greater self-disclosure with their friends. This finding, that the tendency to share personal, private information with one's peers is associated with one's own tendency to engage in a state of private self-awareness, makes good intuitive sense. Persons possessing a more detailed and accurate self-understanding as a result of attending to private thoughts and feelings should be better equipped to self-disclose to others.

Having stated this straightforward explanation, we must acknowledge another possibility. There exists evidence that individuals high in private self-consciousness do understand themselves better than individuals low in private self-consciousness, but such evidence has not shown that these latter individuals know nothing about themselves; they appear merely to have available less accurate and detailed self-information. Thus simple availability of self-information may not be the only factor important in explaining why individuals low in private self-consciousness disclose less. Underlying their tendency not to analyze personal thoughts and feelings may be a general reluctance to engage in activities in which personal, possibly intense, and sometimes negative feelings will be felt and expressed. Because attention to private self-aspects appears to intensify the affective charge of moods (Greenberg & Musham, 1981), it is possible that people low in private self-consciousness avoid engaging in private self-awareness and self-disclosure partly in order to avoid this intensification of affect. Similarly, underlying the tendencies of individuals high in private self-consciousness to self-reflect may be a general desire to engage in activities in which self-awareness might be induced or even required, such as in a self-disclosure context.

Whatever the reasons are for this relation between private self-consciousness and peer self-disclosure, the fact that these two variables are associated may help to explain why the self-evaluations of persons high in private self-consciousness are more similar to their close friends' evaluations of them than are the self-evaluations of individuals low in self-consciousness (Franzoi, 1983). Quite simply, those high in private self-consciousness may provide more information to their friends through intimate self-disclosure than do persons low in self-consciousness. If true, then these friends might possess better knowledge of how these highly self-conscious peers view themselves. Furthermore, because self-evaluation is in large part derived from social evaluation, the tendency of the individuals high in private self-consciousness to engage in self-disclosure may be one reason why they understand themselves better. Discussing their private thoughts, feelings, and aspirations with their friends may help them in better understanding themselves, thus resulting in a clearer, more articulated self-concept.

One final issue regarding the self-consciousness relation needs to be considered. There were sound theoretical reasons to expect level of private self-consciousness to influence degree of self-disclosure. However, it is also possible that disclosing intimate self-aspects to another results in an increased attentiveness to private thoughts and feelings; that is, a dispositional tendency to analyze oneself may make one more likely to self-disclose to others, which may in turn strengthen the tendency to analyze oneself. Although this relation may indeed exist, the most appropriate means to test it is in a longitudinal study in which changes in both variables can be measured over time.

Contrary to expectations, we found only a borderline relation between perspective taking and peer self-disclosure. The most plausible reason for this weak effect may lie in the indirect nature of the hypothesized link between these two variables. Miller et al. (1983) found that perspective taking is associated with receiving disclosure from others, and receiving disclosure often leads to reciprocal disclosure (e.g., Cohn & Strassberg, 1983; Savicki, 1972). Combining these previous findings therefore implies a positive association between perspective taking and self-disclosure with peers. The absence of the predicted statistically significant coefficient for this

path may reflect a breakdown somewhere in this inferential chain. Thus at the present time, the results for perspective taking can only be termed suggestive; more definitive answers await an investigation in which each part of the self-disclosure process as it relates to perspective taking is more directly assessed.

Parental variables

As predicted, respondents reported greater self-disclosure to parents perceived as warm and loving. This result replicates those of Heller (1972), Miller et al. (1983), Pope and Siegman (1968), and Taylor et al. (1969), who have found the warmth of the self-disclosure partner to be a good predictor of the amount of personal information given to him or her.

Regarding the effect of parental education on self-disclosure, there is a significant influence only for fathers; that is, the educational level of the father is positively related to disclosure to him, whereas no significant association is found for the mother. Although these findings should be viewed as merely suggestive, they may reflect a pattern found in previous studies (Gecas, 1981) of middle-class families having a more open and flexible role system, with less sex-segregated division of labor. In our sample, students of better educated fathers may have found it easier to relate and disclose to them because of their fathers' more flexible, less restricted sex role orientation, which may have invited personal discussion. The lack of an association between educational level of mother and self-disclosure can also be explained within this same context because the traditional division of labor in the family is such that the mother's stereotypical social-emotional role makes it more likely that self-disclosure will occur with her, regardless of her social class.

Differences Between Males and Females

The differences expected between men and women in this investigation stem from the hypothesized social norms concerning the social relationships of men and women. Women are expected and encouraged to engage in close relationships characterized by intimacy and the sharing of confidences, whereas men are traditionally encouraged to be more restrained in the expression or sharing of intimate thoughts and feelings (Peplau & Gordon, in press). In consistency with this analysis, female subjects in this study disclosed more to their peers than did male subjects. Two consequences of this difference between the sexes were expected. The first was that the greater societal emphasis for women to have intimate friendships would attenuate the influence of personality variables on women's disclosing; that is, any individual differences that theoretically might be expected to produce greater disclosure would be obscured by the social pressure to engage in more intimate discourse. Conversely, in the absence of such social pressure, it was expected that the peer disclosure of men would be affected by individual difference variables. We found (Model 2) weak support for this prediction in the fact that no statistically significant relation between either personality variable and peer disclosure was found for female subjects although both approached significance. For male subjects, however, private self-consciousness was clearly and positively related to disclosure, even though perspective taking was not.

The second expected difference between the sexes was that the greater emphasis on relationship intimacy among women would make the consequences of a lack of intimacy more severe for them. In consistency with this expectation we found a significant association between peer disclosure and loneliness for women, and no association for men. This pattern is also consistent with earlier investigations (e.g., Berg & Peplau, 1982; Solano et al., 1982). However, despite the fact that the size of these paths clearly varies for men and women the most appropriate test of the “sex differences” hypothesis (the test for differences in chi-square values) fails to support the notion that men and women differ significantly with regard to these three paths. Thus although the path coefficients in Model 2 are consistent with earlier work (especially the path from peer self-disclosure to loneliness), no firm support for the predicted sex differences can be claimed from these data.

Because the results in Model 2 do at least suggest that male loneliness is not much affected by peer self-disclosure, however, one might ask what factors do influence men's feelings of social isolation. The exploratory

analysis in Model 3 provides one answer. This model, which allows for a path between perceived maternal warmth and loneliness for men, provides a significant improvement in fit over a model without such a path. It indicates that above and beyond any link between loneliness and peer disclosure, loneliness for men is also related to perceived mother's warmth; boys with warm, loving mothers reported less loneliness. This finding is intuitively pleasing, because it is reasonable to expect that family relationships do bear some relation to loneliness, even if actual disclosure to parents has not been implicated (e.g., Goswick & Jones, 1982; Solano et al., 1982). This finding suggests, then, that some aspects of family relationships—specifically the affective tone of relationships with mother—may be important in determining men's feelings of social isolation. These results do not indicate that paternal warmth is unimportant, or that women's loneliness is unaffected by parental warmth generally. Had we expanded the model to include all such relationships, we may well have discovered significant paths. In this investigation, however, a conservative strategy was followed, with only a single path that was suggested by the modification index being “freed up” from the original model.

Conclusions

The purpose of our study was to describe and test a general model explaining the relations between loneliness, self-disclosure to peers and parents, and some specific antecedent variables. The results of this endeavor have been largely successful. In addition to replicating previous findings regarding the relation of self-disclosure to loneliness, we have found a strong relation between habitual private self-attention and self-disclosure to peers. This link between private self-consciousness and peer self-disclosure not only provides new insights into the self-disclosure process, but it also has implications for current self-awareness theory. Because the issues salient when one is privately self-aware are by nature covert and personal and, indeed, similar to issues salient in a self-disclosure context, researchers in future studies might usefully explore the motivational bases for habitual self-reflection versus habitual nonself-reflection. It is possible that the two activities are behavioral manifestations of similar motivational needs. By learning more about the motivations behind these activities, our understanding of both self-disclosure and self-consciousness will be enhanced.

Footnotes

[1] It would of course have been possible to estimate paths from the two personality variables to the two parental disclosure variables as well. This was not done because it seemed likely that personality variables would be more potent influences on disclosure among persons roughly equal in status (i.e., peers). Disclosure to persons markedly different in age and status (such as parents) is probably more affected by role requirements of the parent-child relationships and by specific characteristics (such as warmth and education) of the particular target. These paths could have been included, and may have improved the fit of the model. In our view, however, it seemed appropriate to restrict the model to an estimation of the influence of personality variables on peer disclosure.

[2] Eighty-two students were not included in the analyses because of their failure to answer all relevant survey items. In almost all these cases, it was the loneliness scale items located toward the end of the survey booklet that were left blank. Students who failed to complete the survey tended to be in the lower grades (freshmen and sophomores), to have lower grade point averages, and to come from lower income families. They did not differ from the students included in the analyses in terms of any relevant variables, except for a tendency for their mothers to have lower educational levels.

[3] There are two features of the present disclosure measure that should be kept in mind. First, like most disclosure scales, the SDI is a self-report measure and not a measure of actual disclosure. Second, no distinctions were made in our study between disclosure to same-sex and opposite-sex friends. Although it would have been preferable to include both male and female target measures, space considerations dictated against their inclusion.

References

Alwin, D. F., & Jackson, D. J. (1980). Measurement models for response errors in surveys: Issues and applications. In K. F.Schuessler (Ed.), *Sociological methodology* (pp. 68–119). San Francisco: Jossey-Bass.

Archer, R. L. (1979). Role of personality and the social situation. In G. J.Chelune (Ed.), *Self-disclosure* (pp. 28–58). San Francisco: Jossey-Bass.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*, 588–606.

Berg, J. H., & Peplau, L. A. (1982). Loneliness: The relationship of self-disclosure and androgyny. *Personality and Social Psychology Bulletin*, *8*, 624–630.

Bernstein, W. H., & Davis, M. H. (1982). Perspective-taking, self-consciousness, and accuracy in person perception. *Basic and Applied Social Psychology*, *3*, 1–19.

Bohrnstedt, G. W. (1983). Measurement. In P.Rossi, J.Wright, & A.Anderson (Eds.), *Handbook of survey research* (pp. 69–121). New York: Academic Press.

Bradburn, N. (1969). *The structure of psychological well-being*. Chicago: Aldine.

Brennan, T. (1982). Loneliness at adolescence. In L. A.Peplau & D.Perlman (Eds.), *Loneliness: A sourcebook of current theory, research, and therapy* (pp. 269–290). New York: Wiley-Interscience.

Burt, R. S. (1973). Confirmatory factor-analytic structures and the theory construction process. *Sociological Methods and Research*, *2*, 130–190.

Buss, A. H. (1980). *Self-consciousness and social anxiety*. San Francisco: W. H. Freeman.

Chelune, G. J. (1976). The self-disclosure situations survey: A new approach to measuring self-disclosure. *JSAS Catalog of Selected Documents in Psychology*, *6*, 111–112.

Chelune, G. J., Sultan, F. G., & Williams, C. L. (1980). Loneliness, self-disclosure, and interpersonal effectiveness. *Journal of Counseling Psychology*, *27*, 462–468.

Cohn, N. B., & Strassberg, D. S. (1983). Self-disclosure reciprocity among preadolescents. *Personality and Social Psychology Bulletin*, *9*, 97–102.

Davies, M., & Kandel, D. B. (1981). Parental and peer influences on adolescents educational plans: Some further evidence. *American Journal of Sociology*, *76*, 363–387.

Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology*, *10*, 85.

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. ***Journal of Personality and Social Psychology***, *44*, 113–126.

Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology*, *43*, 522–528.

Franzoi, S. L. (1983). Self-concept differences as a function of private self-consciousness and social anxiety. *Journal of Research in Personality*, *17*, 275–287.

Gecas, V. (1981). Contexts of socialization. In M.Rosenberg & R. H.Turner (Eds.), *Social psychology: Sociological perspectives* (pp. 165–199). New York: Basic Books.

Goswick, R. A., & Jones, W. H. (1982). Components of loneliness during adolescence. *Journal of Youth and Adolescence*, *11*, 373–383.

Greenberg, J., & Musham, C. (1981). Avoiding and seeking self-focused attention. *Journal of Research in Personality*, *15*, 191–200.

Heller, K. (1972). Interview structure and interview style in initial interviews. In A. V.Siegman & B.Pope (Eds.), *Studies in dyadic communication*. New York: Pergamon Press.

Hoffman, M. L. (1970). Moral development. In P. H.Mussen (Ed.), *Carmichael's manual of child psychology* (*Vol. 2*). New York: Wiley.

Horowitz, L. M., & French, R. de S. (1979). Interpersonal problems of people who describe themselves as lonely. *Journal of Consulting and Clinical Psychology*, *47*, 762–764.

Jones, W. H. (1981). Loneliness and social contact. *Journal of Social Psychology*, *113*, 295–296.

Jones, W. H., Hansson, R. O., & Smith, T. G. (1980). *Loneliness and love: Implications for psychological and interpersonal functioning*.Unpublished manuscript, University of Tulsa.

Joreskog, K. G. (1969). A general approach to confirmatory maximum likelihood factor analysis. *Psychometrika*, *34*, 183–202.

Joreskog, K. G., & Sorbom, D. (1981). *LISREL V: Analysis of linear structural relationships by the method of maximum likelihood and least squares method*. Chicago: International Educational Services.

Jourard, S. M. (1964). *The transparent self*. New York: Van Nostrand.

Keller, M. (1976). Development of role-taking ability: Social antecedents and consequences for school success. *Human Development*, *19*, 120–132.

McCormack, S. H., & Kahn, A. (1980, May). *Behavioral characteristics of lonely and nonlonely college students*.Paper presented at the meeting of the Midwestern Psychological Association, St. Louis.

Mead, G. H. (1934). *Mind, self, and society*. Chicago: University of Chicago Press.

Miller, L. C., Berg, J. H., & Archer, R. L. (1983). Openers: Individuals who elicit intimate self-disclosure. ***Journal of Personality and Social Psychology***, *44*, 1234–1244.

Peplau, L. A., & Gordon, S. L. (in press). Sex differences in close relationships. In V. E.O'Leary, R. K.Unger, & B. S.Wallston (Eds.), *Women, gender and social psychology*. Hillsdale, NJ: Erlbaum.

Piaget, J. (1932). *The moral judgment of the child*. (M. P.Gabain, Trans.). New York: Harcourt, Brace & World.

Pope, B., & Siegman, A. W. (1968). Interviewer warmth in relation to interviewee verbal behavior. *Journal of Consulting and Clinical Psychology*, *32*, 588–595.

Rubinstein, C., Shaver, P., & Peplau, L. A. (1979). Loneliness. *Human Nature*, *2*, 59–65.

Russell, D., Peplau, L. A., & Cutrona, C. B. (1980). The revised UCLA loneliness scale: Concurrent and discriminant validity evidence. ***Journal of Personality and Social Psychology***, *39*, 472–480.

Russell, D., Peplau, L. A., & Ferguson, M. (1978). Developing a measure of loneliness. *Journal of Personality Assessment*, *42*, 250–293.

Savicki, V. (1972). Outcomes of nonreciprocal self-disclosure strategies. ***Journal of Personality and Social Psychology***, *23*, 271–276.

Scheier, M. R., Buss, A. H., & Buss, D. M. (1978). Self-consciousness, self-report of aggressiveness, and aggression. *Journal of Research in Personality*, *12*, 133–140.

Solano, C. H., Batten, P. G., & Parish, E. A. (1982). Loneliness and patterns of self-disclosure. ***Journal of Personality and Social Psychology***, *43*, 524–531.

Taylor, D. A., Altman, I., & Sorrentino, B. (1969). Interpersonal exchange as a function of rewards and costs and situational factors: Expectancy confirmation-disconfirmation. *Journal of Experimental Social Psychology*, *5*, 324–339.

Turner, R. G. (1978). Consistency, self-consciousness, and the predictive validity of typical and maximal personality measures. *Journal of Research in Personality*, *12*, 117–132.

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