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Running Head: LONELINESS

The Behavioral Confirmation of Loneliness  
in Dyadic Conversations

Jamie A. Gruman ©

Lakehead University

Master's Thesis

June, 1995

Thesis Presented In Partial Fulfilment of the  
Requirements for the Master of Arts Degree in Clinical  
Psychology



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**Abstract**

This study was designed to examine the self-fulfilling nature of the social stigma of loneliness. It was hypothesized that individuals (perceivers) would be less warm and friendly in dyadic conversations with persons believed to be lonely (lonely target) than not-lonely (not-lonely target), and that partners would reciprocate this behavior. These patterns were expected to be stronger in female perceiver/male target than male perceiver/female target dyads. In this study, university students engaged in cross-sex dyadic conversations prior to which they were provided with items from the revised UCLA loneliness scale indicating that their partner (target) was lonely or not-lonely. The analyses revealed that, consistent with the hypotheses, in female perceiver/male target dyads, the perceiver was observed to be less warm during later stages of the conversations when the male target was lonely compared to when not-lonely. It was found that about the same point in the conversations male targets were observed to be less proud when lonely than not-lonely. Additionally, subsequent to the conversations,



perceivers rated targets as less exciting, less interesting, less warm, and less friendly when lonely than not-lonely. The findings are discussed with respect to the complex conditions under which the self-fulfilling nature of loneliness occurs.

The concept of behavioral confirmation was initially proposed by sociologist Robert Merton (1948) under the rubric of the self-fulfilling prophesy:

The self-fulfilling prophesy is, in the beginning, a *false* definition of the situation evoking a new behaviour which makes the originally false conception come *true*. The specious validity of the self-fulfilling prophesy perpetuates a reign of error. For the prophet will cite the actual course of events as proof that he was right from the very beginning. (Merton, 1948, p. 195)

As suggested, when individuals interact with one another, the views, opinions, and beliefs they hold may influence the interaction in such a way as to substantiate their original convictions. That is, although people's impressions of others may be completely erroneous, they may inadvertently structure an interaction such that their impressions are confirmed. The result may be not only perceptual confirmation - a biased interpretation of available evidence leading to a conclusion in favour of the original impression, but behavioral confirmation - an

observable alteration in the overt behaviour of an individual that occurs as a result of an (unfounded) expectancy of a second individual.

Among the earliest studies to investigate the self-fulfilling nature of expectancies was that conducted by Rosenthal and Jacobson (1968). These investigators led elementary school teachers to believe that a new IQ test administered to their students had indicated that certain students "bloomers" should demonstrate a significant improvement in intellectual performance over the course of the school year. In actuality however, the label "bloomer" had been assigned randomly to students. Results of the IQ tests administered at the beginning and end of the school year indicated that students assigned the bogus label showed a greater increase in IQ relative to other students; thus confirming the teachers' original expectancy.

Since the self-fulfilling prophesy is precipitated by a false impression of others, it logically follows that racist beliefs should result in a behavioral confirmation effect. This is precisely what was

proposed by Word, Zanna and Cooper (1974) in their investigations of interracial interactions. They examined the behaviour of white interviewers toward white and black job applicants who had been trained to act in a standard fashion. Analyses of the verbal and non-verbal behaviors of the interviewers revealed that when dealing with black applicants interviewers physically placed themselves farther from the applicant, devoted less time to the interview, and had a higher frequency of speech errors than when dealing with white applicants. In a second investigation white confederates were trained to act in a manner closely approximating the behaviour of the interviewers in the first study. White job applicants subjected to the less immediate style experienced by black subjects in the first investigation were judged as less adequate for the job, less calm and composed, and committed more speech errors than white applicants exposed to the more immediate interview style. These two studies suggest that in interracial interactions the prejudiced attitudes of one individual may constrain the behaviour

of those involved in such a way as to elicit the very behaviors thought to characterize the other.

Not all investigations of the behavioral confirmation process have been conducted in such highly structured situations involving relationships of obvious inequality. In their investigation into whether the social stereotype of attractiveness would elicit sociable behaviour Snyder, Berscheid, and Tanke (1977) had male perceivers engage in a 10-minute interaction with female targets who were ostensibly believed to be either attractive or unattractive as a result of having shown perceivers pictures alleged to be of the targets. The interaction took place through an intercom system, and targets were unaware of the attractiveness manipulation. Results indicated that targets believed by their partners to be attractive came to behave in a more friendly, likable, and sociable manner than did their "unattractive" counterparts. The differences in target behaviour evidenced between the women in the two conditions was perceptible to naive observer judges, and not only to the male perceivers. What had initially been a reality in the minds of the men (beautiful

people are good people) became objective reality in the behaviour of the women with whom they conversed (Snyder et al., 1977). Subsequent studies have demonstrated that the self-fulfilling quality of attractiveness applies equally well to women perceivers (Andersen & Bem, 1981), and seems to be mediated, in part, by sex-role identity (Strypnek & Snyder, 1982).

A model of simple social interaction designed to account for the behavioral confirmation effects observed in these and other investigations has been proposed by Darley and Fazio (1980). They suggest that the constructive, interpretive process of perception of other people involves five successive steps: (1) A perceiver develops a set of expectancies about a target person. (2) The perceiver acts toward the target in a manner that is consistent with his/her expectations about the target. (3) The target interprets the meaning of the perceiver's behaviour. (4) Based on the interpretation, the target responds to the perceiver. (5) The perceiver interprets the target's actions. This cycle will then repeat itself until the interaction is terminated. One further step may be usefully included

in the sequence: (6) The target interprets his/her own behaviour. This addition is important in that if the target fails to recognize the influence of the perceiver's behaviour in determining his/her own, and perceives his/her own behaviour as freely chosen, the target might infer something about his/her own traits and dispositions (Fazio, Effrein, & Falender, 1981). This may result in a modification of the individual's self-concept, and a subsequent enduring alteration of behaviour.

Snyder and Swann (1977) found evidence that under certain conditions the behavioral confirmation effect can persist into succeeding interactions. They had pairs of subjects compete in a reaction time task and alternated the availability of a distracting "noise weapon" between subjects on successive trials. Targets who interacted with perceivers led to anticipate an hostile partner demonstrated increased hostility (as measured by the use of the noise weapon) than did targets whose perceivers expected non-hostile partners. In a second interaction with naive perceivers, which immediately followed, targets' hostile behavior

persevered when they regarded their previous actions as indicative of a personal disposition. This study demonstrated that if an elicited target behaviour is accompanied by a self-attribution the conduct brought on by the behavioral confirmation process may be abiding.

The perseverance of the change in behavior induced by behavioral confirmation has been shown to demonstrate cross-situational stability (Fazio et al., 1981), and is accompanied by an actual change in self-concept (Fazio et al., 1981; Riggs, Monach, Ogburn, & Pahides, 1983). The implication here is obvious: Interacting with a perceiver who possesses a groundless or inaccurate expectancy of a target may not only cause that target to display the behavior expected by the perceiver, but may effect a change in the target's self-concept, resulting in the internalization and perseveration of the (formerly) uncharacteristic behavior.

Although the majority of experiments designed to investigate the effects of perceiver expectancies on target behaviour have found expectancy confirmation in



the target's actions, a small number of studies have demonstrated the exact opposite effect. That is, conduct of the targets has sometimes led to a behavioral disconfirmation of the perceiver's original expectancy.

Bond (1972) led subjects to believe that they would be having a conversation with either a cold or warm partner. In the ensuing interaction, subjects who believed they were conversing with a cold person induced the other to behave more warmly than those who thought they were speaking with a warm individual. Similarly, Ickes, Patterson, Rajcecki, and Tanford (1982) led subject to expect either a friendly conversation partner, an unfriendly conversation partner, or provided no expectancy. Their results indicated that targets dealing with subjects expecting an unfriendly interaction partner behaved in a friendlier fashion than targets in either of the other two conditions. Finally, Snyder and Swann (1980) had instructors teach a card trick to pupils labelled as either high-ability or low-ability. They simultaneously lead instructors to believe that ability was mediated

by either intrinsic factors such as aptitude, or extrinsic factors such as quality of instruction. When instructors were convinced that ability was mediated by intrinsic factors, low-ability students outperformed high-ability students in a consequent demonstration of proficiency.

Ickes et al., (1982) have suggested that the behavioral disconfirmation observed in the preceding investigations may be due to the perceivers adoption of a compensation strategy. Succinctly put, the compensation strategy involves acting in such a way as to diminish the level of anticipated uncomfortability in an interaction by adopting a particularly pleasant position. This position will, in turn, elicit agreeable behaviour in one's partner. They submit that the compensation strategy is most likely to be invoked in (1) face to face encounters, particularly when (2) future interaction is expected, and when the interaction is regarded as (3) potentially unpleasant but (4) conceivably modifiable (Ickes et al., 1982).

As the experiments conducted by Snyder and Swann (1977), and Word et al., (1974) indicate, behavioral

confirmation need not involve deceptive manipulation on the part of investigators. It can, and most often does, occur in a natural setting between individuals trying to form impressions of one another. Expectancies that arise naturally will occur as a result of the personal characteristics, demeanour, and verbal and non-verbal behaviour of the participants involved.

Behavioral confirmation effects have been observed with reference to numerous personality traits and characteristics but no investigation has yet examined this process with respect to loneliness. For purposes of clarification loneliness has previously been classified into two types: subjective and objective. The former refers to the actual experience of loneliness per se, as assessed by instruments such as the UCLA Loneliness Inventory. The latter refers to the display of behaviors typically associated with stereotypically lonely individuals (Rotenberg, Bartley & Toivonen, 1993). It is reasonable to hypothesize that perceived loneliness in others may precipitate a behavioral confirmation effect as it has been demonstrated repeatedly that individuals believed to be

lonely (objective loneliness) are evaluated negatively by others (Borys & Perlman, 1985; Lau & Gruen, 1992; Rotenberg & Kmill, 1992).

Rotenberg and Kmill (1992) provided undergraduate students with a written description of a prototypically lonely or non-lonely person identified as male or female. The students then rated the person in terms of psychosocial functioning and acceptance. Their results demonstrated that subjects attributed lower psychosocial functioning to, and were less accepting of the lonely individual than the non-lonely individual. Females were also found to evaluate the lonely person more negatively than males. The authors interpret the findings as supportive of the view that loneliness is a socially stigmatized state.

Similarly, Lau and Gruen (1992) presented subjects with a questionnaire containing a description of a lonely or non-lonely male or female, and instructed subjects to rate the individual on a number of attributes. Results supported the contention that perceived loneliness is indeed a stigmatized condition. Compared to non-lonely individuals, hypothetically

lonely people were perceived as less psychologically adjusted, less achieving, less intellectually and socially competent, weaker, less liked, less attractive and more passive. Consistent with the previously mentioned study it was found that female perceivers were more critical of lonely subjects than were male perceivers. It was also observed that lonely males were evaluated more severely than lonely females. In their investigation Borys and Perlman (1985) also found that hypothetically lonely males elicited more social rejection than hypothetically lonely females. This may be attributed to the sex stereotype of loneliness which asserts that some psychological states are unmasculine and therefore undesirable for men (see Lau, 1989).

In addition to the research indicating that people believed to be lonely are regarded less favorably than people thought to be not-lonely, there exists evidence suggesting that the impressions formed spontaneously of lonely people may differ from those formed of the not-lonely. Sansone, Jones, and Helm (1979) found that after engaging in a dyadic conversation, subjectively lonely participants were rated by their partners as

being more likely to rate themselves negatively. This finding suggests that lonely people may present themselves differently than not-lonely people and invite a different evaluation. Similarly, Solano, Batten and Parish (1982) have shown that lonely subjects are less effective at making themselves known to others than not-lonely subjects. This finding has been corroborated by evidence indicating that lonely individuals make fewer personal attention statements, ask fewer questions, change the topic of conversation more frequently, and respond more slowly to their conversation partners than do not-lonely individuals (Jones, Hobbs, & Hockenbury, 1982). In a review by Jones (1982) it is concluded that "converging lines of evidence suggest that the behaviour of lonely people may be characterized as being more negativistic, rejecting, self-absorbed, self-deprecating, and less responsive [than not-lonely people]" (p.249).

The actions of lonely people may lead others to develop a particular set of negative expectancies which may, in turn, serve to elicit the behavioral confirmation of loneliness in the already lonely

individual. And, in a naturally occurring conversation the lonely person is likely to attribute his/her induced behavior to a personal disposition which may serve to reinforce the incorporation of loneliness into that individual's self-concept.

Considering that behavioral confirmation is initiated by a set of expectancies or impressions about the nature or characteristics of another individual, and as it has been demonstrated that the perception of people supposed to be lonely tends to invoke a negative stereotype, it is hypothesised that leading a perceiver to consider a target as lonely will elicit the behavioral confirmation of loneliness in the target. That is, the false perception of loneliness may cause individuals to act in such a manner as to induce a conversation partner to display the behaviour typically associated with the stereotype introduced.

The purpose of the present study was to investigate the self-fulfilling nature of the social stigma of loneliness employing the paradigm designed by Snyder et al., (1977). Male and female perceivers interacted, via microphones and headsets, with

opposite-sex targets believed to be either lonely or not-lonely in the context of a getting-acquainted conversation.

It was expected that perceivers interacting with targets believed to be lonely would elicit less sociable behaviour from the targets than perceivers conversing with targets believed to be not-lonely. Specifically, it was expected that perceivers interacting with lonely targets would be less warm and friendly than those interacting with not-lonely targets, and that this would be reflected in the behavior of the targets themselves. Additionally, as it has been demonstrated that males are more stigmatized by loneliness than females (Lau & Gruen, 1992), and females are harsher judges of loneliness than males (Rotenberg & Kmill, 1992), it was expected that female perceivers interacting with lonely male targets would be less warm and friendly, and elicit stronger behavioral confirmation effects than male perceivers interacting with lonely female targets.



## **Method**

### Participants

Eighty-three male and 83 female undergraduates enrolled in introductory psychology courses at Lakehead University participated in this study. Subjects were randomly scheduled to appear in previously unacquainted pairs and received one hour of course credit for their participation.

### Apparatus

Prior to the experimental session subjects completed a brief questionnaire assessing attitudes and feelings and a questionnaire assessing biographical information (see Appendix A). The manipulation of loneliness was achieved through the distribution of one of two bogus attitude and feeling questionnaires provided to the perceiver prior to the interaction and ostensibly completed by the target. The questionnaire was comprised of items adapted from the Revised UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980), in addition to filler items. Loneliness-related items from the questionnaire were answered such that the

participant would have scored high on loneliness (lonely target condition) or low on loneliness (not-lonely target condition). Filler items were scored identically in the two versions (see Appendix B).

A list of identical conversation topics were supplied to both interactants. The topics were developed from the Strassberg and Anchor (1975) coding scheme for rating intimacy of self-disclosure. Included in the list were three topics each of low-intimacy, medium-intimacy and high-intimacy rating (see Appendix C).

Conversations between perceivers and targets occurred through a system of microphones and headsets connected to two tape recorders. Subsequent to the interaction perceivers and targets rated each other employing pairs of bipolar adjectives initially employed by Dion (1972), in order to assess final impressions of the other member of the dyad. Ratings were made on a 7-point, Likert-type scale the ends of which were labelled by polar opposites. This scale contained 28 pairs of adjectives of which four pairs were critical to the examination of the research

hypotheses: exciting-dull, interesting-boring, warm-cold, and friendly-unfriendly (see Appendix D). Perceivers and targets were recorded independently using audio tape recording devices. Observer judges appraised both participants by rating the observed level of characteristics (adjectives such as warm, friendly, proud), reflecting various aspects of the conversations, on a scale of one to five. The majority of the adjectives were borrowed from the PANAS scale (Watson, Clark & Tellegen, 1988). Other adjectives were added specifically for the purposes of this study (see appendix E).

### Procedure

In order to ensure that participants would not interact prior to the experimental session, they arrived at the laboratory 10-minutes apart. Subjects were informed that the experiment concerned acquaintance processes and that the reason they would be interacting via the microphones and headsets was to eliminate the effects of non-verbal communication in the interaction. Prior to the interaction subjects were

seated in different rooms where they were asked to give written permission for the conversation to be tape recorded, respond to the biographical questionnaire, and completed the attitude and feeling questionnaire both of which, it was explained, would be provided to their partner. In lieu of the attitude and feeling questionnaire the target completed, perceivers were provided with either the lonely or not-lonely questionnaire in addition to the biographical data their partner had supplied. Targets were provided with the perceivers biographical data, plus a questionnaire on which all scores for items relating to loneliness were kept constant, and in the average range. In order to ensure that subjects carefully read the material with which they were provided, the experimenter informed them that just prior to the interaction they would be asked questions about their conversation partners in the form of another brief questionnaire (see Appendix F). Results of the analyses of this questionnaire would ultimately serve as an indication of the effectiveness of the manipulation of loneliness. After reading the questionnaires completed by the

lonely target or not-lonely target, subjects were provided with the list of nine conversation topics which varied with respect to level of intimacy. Subjects then engaged in a series of six 3-minute structured conversations through the microphones and headsets. The perceiver was instructed to choose the first topic to be discussed and initiated a conversation which was terminated by the experimenter after three minutes. The target was then given the choice of which topic to discuss and initiated a second three minute interaction. This sequence continued until each subject had chosen a total of three topics. Subjects were permitted to discuss a previously chosen topic. Subjects spoke into microphones which were connected to separate tape recording devices in order that each member of the dyad could be recorded independently.

Once the conversation was concluded subjects rated one another on the 28 adjective pairs in order to record final impressions of their partners. Subjects were then thanked and debriefed following Mills' (1976) procedure for debriefing subjects in experiments

involving deception. This procedure, which is based on 20 years of experience with debriefing, can be adapted to successfully deal with the issues associated with all types of studies involving deception. It was made explicitly clear to both participants that the interaction was structured by the experimenter, and that their behavior during the preceding conversation was influenced by the manipulation and was not a reflection of their own personalities or dispositions.

Using the audio-tape recordings, both sides of each interaction were rated by independent observer judges using the list of adjectives.

#### Inter-Rater Reliability.

In order to establish inter-rater reliability of the adjectives used by observer judges to code the behavior of participants, the two main variables of interest, warmth and friendliness, in addition to all other variables from a sub-sample of tapes were scored by two judges. These two variables were chosen as primarily important as it has been suggested that warmth (Chadha & Chandna, 1985), and friendliness (Good, 1977; Caprara, Barbaranelli & Livi, 1994) are

fundamental personality characteristics. The complete set of six exchanges for four subjects were rated by the judges rendering a total of 24 observations per adjective. A Pearson product-moment correlation coefficient was calculated between the judges scores for each of the adjectives. A minimum correlation coefficient of .3 was considered sufficient to include the adjective in the data analysis. Results of the analyses yielded 8 viable adjectives. In order to determine the degree of measurement error associated with the eight adjectives which met the minimum criterion, intraclass correlation coefficients (Shrout & Fleiss, 1979) were calculated. Intra-class correlations provide a measure of the ratio of the variance of interest over the sum of the variance of interest plus error (Bartko, 1966). Finally, the Spearman-Brown prophesy formula was utilized in an effort to approximate the degree of association that could be expected if twice as many subjects were included in the reliability estimate. The eight acceptable variables with their corresponding Pearson

product-moment correlations, Intraclass correlations,  
and Spearman-Brown estimates are presented in Table 1.



Table 1

Pearson Product-Moment Correlation Coefficients,  
Intraclass Correlation Coefficients, and Spearman-Brown  
Estimates for Adjectives Meeting Minimum Criterion

Adjective	PPM <sup>a,b</sup>	Intra-Class	Spearman-Brown
Proud	.47*	.45	.64
Nervous	.60**	.57	.75
Determined	.56**	.55	.72
Jittery	.44*	.43	.61
Warm	.52**	.51	.68
Sociable	.61**	.61	.76
Friendly	.53**	.53	.69
Cooperative	.36	.34	.52

<sup>a</sup> Pearson product-moment correlation.

<sup>b</sup> df = 46.

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

## **Results**

### Sample Composition for Analyses

The data from a small sub-sample of subjects were excluded from the analyses for methodological reasons. One male subject incorrectly completed the preliminary questionnaire and the dyad of which he was a member was deleted from the data analysis. During the course of the experimental sessions it became apparent that in two of the dyads subjects knew each other, and in a third dyad the loneliness manipulation was seriously questioned. Data from these dyads were omitted from analysis leaving 79 male subjects and 79 female subjects.

### Manipulation Check

In order to ascertain the effectiveness of the manipulation of loneliness, the loneliness dimension from the questionnaire perceivers completed immediately prior to the interaction, assessing their initial impressions of the target, was subjected to a 2 (Dyad Composition: male perceiver/female target vs. female perceiver/male target) X 2 (Loneliness of Target: lonely vs. not-lonely) analysis of variance (ANOVA). Results

of this analysis yielded a main effect of Loneliness  $F(1, 75) = 5230.59, p < .001$ , indicating that perceivers judged targets from the lonely target conditions as more lonely than targets from the not-lonely target conditions. ( $M = 5.75$  and  $M = .05$  for the lonely targets and not-lonely targets respectively). (As some of the scales on the questionnaire were reversed, means in this, and the following analyses have been converted such that higher scores reflect a greater amount of the attribute discussed).

#### Stereotypical Attributes

Identical analyses were conducted for the four remaining dimensions on the questionnaire. Results of the analyses yielded main effects of Loneliness for friendliness  $F(1,75) = 153.57, p < .001$ ; happiness  $F(1,75) = 254.03, p < .001$ ; confidence  $F(1,75) = 100.07, p < .001$ ; and reservedness  $F(1,75) = 296.31, p < .001$ . Perceivers in the lonely target conditions judged targets to be less friendly ( $M = 2.90$  and  $M = 5.69$  for the lonely target and not-lonely target respectively), less happy ( $M = 1.88$  and  $M = 5.46$  for

the lonely target and not-lonely target respectively), less confident ( $M = 2.97$  and  $M = 5.23$  for the lonely target and not-lonely target respectively), and more reserved ( $M = 4.75$  and  $M = 0.87$  for the lonely target and not-lonely target respectively) than perceivers in the not-lonely target conditions. These data demonstrate that perceivers held a negative stereotype of the lonely target and believed the lonely individual (target) to be unfriendly, unhappy, not confident, and reserved.

#### Intercorrelations Among Observer Ratings

In order to examine the intercorrelations among observer ratings, correlations were computed among the variables with ratings summed across the entire set of exchanges. Separate correlations were calculated for perceivers and targets. The intercorrelations among the observer ratings for perceivers and targets can be observed in Tables 2 and 3 respectively. As can be noted from the tables, both the "negative" adjectives and the "positive" adjectives intercorrelate positively, and these sets are negatively correlated with each other. Although the adjectives were observed

Loneliness

Table 2

Intercorrelations Among Adjectives Used to Rate Perceivers

	<u>Adjective</u>							
<u>Adjective</u>	Prd	Nrv	Det	Jit	Wrm	Soc	Fnd	Cop
Proud (Prd)		-.17	.50**	-.16	.40**	.42**	.43**	.27*
Nervous (Nrv)			-.32**	.85**	-.30**	-.33**	-.32**	-.30**
Determined (Det)				-.34**	.17	.40**	.35**	.25*
Jittery (Jit)					-.10	-.17	-.13	-.10
Warm (Wrm)						.80**	.87**	.82**
Sociable (Soc)							.92**	.85**
Friendly (Fnd)								.85**
Cooperative (Cop)								

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

Loneliness

Table 3  
Intercorrelations Among Adjectives Used to Rate Targets

Adjective	Adjective							
	Prd	Nrv	Det	Jit	Wrm	Soc	Fnd	Cop
Proud (Prd)		-.21	.41**	-.13	.47**	.41**	.45**	.41**
Nervous (Nrv)			-.09	.78**	-.31**	-.29**	-.26*	-.25*
Determined (Det)				-.04	.26*	.47**	.45**	.41**
Jittery (Jit)					-.25*	-.09	-.09	-.13
Warm (Wrm)						.83**	.86**	.81**
Sociable (Soc)							.96**	.88**
Friendly (Fnd)								.89**
Cooperative (Cop)								

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

to be interrelated, they were subjected to separate analyses due to fact that there were appreciable differences in the ratings of the adjectives across exchanges. These different patterns were found to be critical to the findings.

#### Perceptual Confirmation of Perceivers

In order to assess perceivers' behavior towards the targets, observer ratings of the two main variables of interest: warmth and friendliness of perceivers, were each subjected to a 2 (Loneliness of Target: lonely vs. not-lonely) X 2 (Dyad Composition: male perceiver/female target vs. female perceiver/male target) X 6 (Exchange) repeated measures analysis of variance (ANOVA) on the exchange variable. The exchange variable refers to the sequence of discussions punctuated by the initiation or continuation of a topic of conversation. Identical analyses were conducted for the six ancillary variables which were not critical to our hypotheses.

Perceiver Warmth. Results of the analysis for perceiver warmth yielded a main effect of Exchange,  $F(5,375) = 3.95, p < .05$  which was qualified by a Dyad Composition X Loneliness of Target X Exchange interaction,  $F(5,375) = 2.61, p < .05$ . The means for this analysis are shown in Table 4. Tests of simple

Table 4

Mean Perceiver Warmth Ratings as a Function of Loneliness of Target, Exchange, and Dyad Composition

Exchange	<u>Loneliness of Target</u>	
	<u>Lonely</u>	<u>Not-Lonely</u>
	M	M
<u>Female Perceivers/Male Targets</u>		
First	2.6	3.1
Second	3.2	2.9
Third	3.0	3.4
Fourth	2.9	3.4
Fifth	2.8	3.6
Sixth	3.2	3.3
<u>Male Perceivers/Female Targets</u>		
First	3.0	2.8
Second	2.8	3.1
Third	3.0	3.3
Fourth	3.1	3.4
Fifth	3.1	3.2
Sixth	3.4	3.3

Note. Higher scores indicate greater warmth.



effects yielded a significant Loneliness of Target X Exchange interaction for the female perceiver/male target dyads  $F(5,375) = 3.63, p < .05$ . Tukey's a posteriori comparisons revealed that perceivers in the female perceiver/lonely male target condition were observed to be less warm than perceivers in the female perceiver/not-lonely male target condition during the first, fourth and fifth exchanges ( $p < .05$ ).

Perceiver Friendliness. Analysis of perceiver friendliness yielded a main effect of Exchange  $F(5,375) = 11.20, p < .001$ . As indicated by the means, in each subsequent exchange perceivers treated targets in a more friendly manner ( $M$ 's = 3.32, 3.53, 3.70, 3.69, 3.81, and 3.93 for exchanges one thru six respectively).

Perceiver Nervousness. Results of the analysis for perceiver nervousness yielded a main effect of Exchange  $F(5,375) = 17.77, p < .001$  which was qualified by a significant Loneliness of Target X Exchange interaction  $F(5,375) = 2.41, p < .05$ . Means for this analysis are displayed in Table 5. Simple effect analyses revealed effects of Exchange for the lonely target conditions  $F(5,385) = 4.51, p = .001$ ; and the not-lonely target conditions  $F(5,385) = 15.77, p < .001$ . Tukey's a

Table 5

Mean Perceiver Nervousness Ratings as a Function of  
Loneliness of Target and Exchange

Exchange	<u>Loneliness of Target</u>	
	<u>Lonely</u> M	<u>Not-Lonely</u> M
First	1.95	2.28
Second	1.65	1.92
Third	1.55	1.59
Fourth	1.45	1.43
Fifth	1.42	1.46
Sixth	1.55	1.33

Note. Higher scores indicate greater nervousness

posteriori comparisons revealed that in the lonely target conditions a significant reduction in perceiver nervousness occurred during the second exchange, and in the not-lonely target conditions during the second and third exchanges ( $p < .05$ ). These results indicate that regardless of loneliness of targets, perceivers in both conditions of the study became less nervous as the conversations progressed. The slope of the curve for perceivers in the not-lonely target conditions, however, was greater than for perceivers in the lonely target conditions. This suggests that perceivers interacting with not-lonely targets show a more pronounced decrease in nervousness relative to perceivers interacting with lonely targets.

Perceiver Jitteriness, Sociability, and Cooperativeness. Results of the analysis for perceiver jitteriness yielded a main effect of Exchange  $F(5,375) = 6.97, p < .001$ . As indicated by the means, perceivers demonstrated decreases in jitteriness as a function of

exchange ( $M$ 's = 2.17, 1.88, 1.67, 1.59, 1.69, and 1.68 for exchanges one thru six respectively).

Results of the analysis for perceiver sociability yielded a main effect of Exchange  $F(5,375) = 8.53$ ,  $p < .001$ . As indicated by the means, perceivers were observed to become increasingly sociable as the conversations progressed ( $M$ 's = 3.29, 3.36, 3.67, 3.63, 3.72, and 3.74 for exchanges one thru six respectively).

Results of the analysis conducted for perceiver cooperativeness yielded a main effect of Exchange  $F(5,375) = 2.30$ ,  $p < .05$ . As indicated by the means, perceivers became increasingly cooperative as the conversations progressed ( $M$ 's = 3.65, 3.70, 3.82, 3.82, 3.82, and 4.00 for exchanges one thru six respectively).

#### Behavioral Confirmation of Targets

In order to assess targets' behavior towards the perceivers, observer ratings of the main interest

variables, warmth and friendliness of targets, were each subjected to a 2 (Loneliness of Target: lonely vs. not-lonely) X 2 (Dyad Composition: male perceiver/female target vs. female perceiver/male target) X 6 (Exchange) repeated measures analysis of variance (ANOVA) on the exchange variable. Identical analyses were performed on each of the six ancillary variables which were not critical to our hypotheses.

Target Warmth. Results of the analysis for target warmth yielded a main effect of Exchange  $F(5, 375) = 9.41, p < .001$ . As indicated by the means, in succeeding exchanges targets became increasingly warm towards the perceivers. ( $M$ 's = 2.65, 3.00, 3.10, 3.20, 3.15, and 3.26 for exchanges one thru six respectively).

Target Friendliness. Results of the analysis for target friendliness yielded the same results as target warmth. A main effect of Exchange was observed  $F(5, 375) = 15.02, p < .001$ . As indicated by the means, target

friendliness tended to increase as a function of exchange. (M's = 3.07, 3.39, 3.51, 3.53, 3.67, and 3.79 for exchanges one thru six respectively)

Target Nervousness. Results of the analysis for target nervousness yielded a main effect of Exchange  $F(5,375) = 20.13, p < .001$ . As indicated by the means, targets became less nervous as the conversations progressed (M's = 2.06, 1.77, 1.53, 1.51, 1.30, and 1.43 for exchanges one thru six respectively).

Target Jitteriness. Results of the analysis for target jitteriness yielded a main effect of Exchange  $F(5,375) = 8.84, p < .001$ , which occurred as a result of the fact that targets became less jittery as the conversation progressed. A main effect of Dyad was also observed  $F(1,75) = 4.25, p < .05$ , indicating that targets in the male perceiver/female target dyads were rated as significantly more jittery than targets in the female perceivers/male target dyads. The analysis also yielded a Loneliness of Target X Exchange interaction

$F(5,375) = 3.36, p < .05$ . The means for this analysis are displayed in Table 6. Tests of simple effects revealed that targets in the not-lonely conditions decreased their jitteriness significantly as the conversations progressed  $F(5,385), p < .001$ . Tukey's a posteriori comparisons revealed that during the fourth exchange targets in the not-lonely conditions showed a significant decrease in jitteriness ( $p < .05$ ). These results parallel somewhat the decreases in nervousness demonstrated by the perceivers, and suggest the complementarity of behavior we hypothesized would be shown.

Target Pride. Analysis of the targets' proudness ratings yielded a trend for the Composition of Dyad X Loneliness of Target X Exchange  $F(5,375), p = .068$ . Tests of simple effects demonstrated a significant Dyad Composition X Loneliness of Target interaction during the fourth exchange  $F(1,75) = 5.92, p < .05$ . Means for these analyses are presented in Table 7. Tukey's a

Table 6

Mean Target Jitteriness Ratings as a function of  
Loneliness of Target and Exchange

---

Exchange	<u>Target Condition</u>	
	<u>Lonely</u>	<u>Not-Lonely</u>
	M	M
First	1.80	2.17
Second	1.62	1.94
Third	1.60	1.79
Fourth	1.62	1.43
Fifth	1.42	1.53
Sixth	1.57	1.35

---

Note. Higher scores indicate greater jitteriness



Table 7

Mean Target Pride Ratings as a Function of Loneliness of Target,  
Exchange, and Dyad Composition

Exchange	<u>Loneliness of Target</u>	
	<u>Lonely</u> M	<u>Not-Lonely</u> M
<u>Female Perceivers/Male Targets</u>		
First	1.5	1.6
Second	2.0	1.6
Third	1.6	1.7
Fourth	1.3	1.9
Fifth	1.6	1.7
Sixth	1.5	1.6
<u>Male Perceivers/Female Targets</u>		
First	1.6	1.7
Second	1.6	1.6
Third	1.8	1.5
Fourth	1.8	1.3
Fifth	1.4	1.8
Sixth	1.9	1.5

Note. Higher scores indicate greater pride.

posteriori comparisons revealed that targets in the female perceivers/lonely male targets condition were rated as less proud than targets in the female perceivers/not-lonely male targets condition, and that targets in the male perceivers/not-lonely female targets condition were rated as less proud than targets in the female perceivers/not-lonely male targets condition ( $p < .05$ ). Again, these results parallel somewhat the findings for the warmth of perceivers.

Target Sociability and Cooperativeness. Results of the analysis for target sociability yielded a main effect for Exchange  $F(5,375) = 14.31, p < .001$ . As indicated by the means, in each subsequent exchange targets became increasingly sociable ( $M$ 's = 3.07, 3.36, 3.50, 3.53, 3.68, and 3.73 for exchanges one thru six respectively). These results parallel those for perceiver sociability.

Results of the analysis conducted for target cooperativeness yielded a main effect of Exchange  $F(5,375) = 7.57, p < .001$ . Duplicating the results obtained for perceiver cooperativeness, and as

indicated by the means, targets became more cooperative as a function of exchange ( $M$ 's = 3.38, 3.63, 3.69, 3.68, 3.89, and 3.92 for exchanges one thru six respectively). No other main effects or interactions were noted.

#### Subject Ratings of Conversation Partners

The four bipolar adjective pair scores from the questionnaire subjects completed subsequent to the interaction were analyzed independently using four 2 (Dyad Composition: male perceiver/female target vs. female perceiver/male target) X 2 (Loneliness of Target: lonely vs. not-lonely) Analyses of Variance (ANOVA's) on perceivers' and targets' ratings of their partners.

Perceivers' Ratings of Targets. Results of the analysis for perceivers' ratings of targets along the exciting-dull dimension yielded a main effect of Loneliness of Target  $F(1,75) = 13.38, p < .001$ . As indicated by the means, perceivers in the lonely target conditions rated targets as less exciting than perceivers in the not-lonely target conditions,  $M = 3.95$  and  $M = 4.78$  for the lonely target conditions and not-lonely target conditions respectively (means for this, and the following analyses have been converted

such that higher scores reflect a greater amount of the attribute discussed).

The analysis for the interesting-boring dimension yielded a main effect of Loneliness of Target  $F(1,75) = 4.2$ ,  $p < .05$ . This occurred as a result of perceivers in the lonely target conditions rating targets as less interesting than perceivers in the not-lonely target conditions ( $M = 4.9$  and  $M = 5.25$  for the lonely target conditions and the not-lonely target conditions respectively).

Results of the analysis for the warm-cold pair of adjectives also yielded a main effect of Loneliness of Target  $F(1, 75) = 4.8$ ,  $p < .05$ . Perceivers in the lonely target conditions rated targets as less warm than perceivers in the not-lonely target conditions ( $M = 4.62$  and  $M = 5.08$  for the lonely target conditions and not-lonely target conditions respectively).

Results of the analysis for the friendly-unfriendly dimension yielded a main effect of Loneliness of Target  $F(1,75) = 9.9$ ,  $p < .05$ . As indicated by the means, perceivers in the lonely target conditions rated targets as less friendly than perceivers in the not-lonely target conditions ( $M = 5.3$

and  $M = 5.72$  for the lonely target conditions and not-lonely target conditions respectively).

Targets' Ratings of Perceivers. Results of the analysis for the friendly-unfriendly dimension revealed a trend for Loneliness of Target  $F(1,74) = 3.41, p = .069$ . As indicated by the means, targets in the lonely target conditions rated perceivers as more friendly than targets in the not-lonely conditions rated perceivers ( $M = 5.6$  and  $M = 5.36$  in the lonely target conditions and not-lonely target conditions respectively). None of the other analyses yielded significant main effects or interactions.

### Discussion

In this study, individuals (perceivers) were provided with the alleged answers of another person (targets) on selected items from the revised UCLA loneliness scale as a means of manipulating perceptions of the targets' loneliness. This manipulation was found to be successful. Perceivers who were provided with answers indicating that targets were high on the loneliness scale (lonely targets) judged targets as more lonely than perceivers provided with answers indicating that targets were low on the loneliness scale (not-lonely targets). This method of manipulating attributed loneliness could serve as an alternative to the manipulation of attributed loneliness by descriptive paragraphs which has been used in studies to date (see, Lau & Gruen, 1992; Rotenberg & Kmill, 1992).

There was evidence in this study for the negative stereotypes individuals are believed to maintain of lonely persons. The findings indicated that participants held a negative stereotype of the lonely person (target) and believed he/she was less friendly,

less happy, less confident, and more reserved than the not-lonely person (target). These findings are consistent with previous research (Borys & Perlman, 1985; Lau & Gruen, 1992; Rotenberg & Kmill, 1992) which demonstrates that individuals hold negative stereotypes of, and stigmatize lonely persons.

The present experiment was designed to investigate the self-fulfilling nature of the social stigma of loneliness. It was hypothesized that perceivers interacting with targets believed to be lonely would act less warm and friendly towards the target than perceivers interacting with targets believed to be not-lonely and, in return, elicit less warm and friendly behavior from the targets. It was further hypothesized that that pattern would be stronger when the dyad was composed of female perceivers and male targets than when the dyad was composed of male perceivers and female targets.

Some of the findings conformed to the hypotheses advanced. It was found that for the female perceiver/male target dyad, the perceiver was observed to be less warm in her conversations with the lonely target than with the not-lonely target. These findings

are consistent with the hypothesis that perceivers would be less warm in conversations with targets believed to be lonely than not-lonely, and that this effect would be optimally apparent in the female perceiver/male target dyad. However, contrary to expectation, this effect was restricted to this dyad composition and was not found in male perceiver/female target group.

The tendency for targets to complement the behavior of perceivers was not found in this study. Contrary to expectation, in the female perceiver/male target dyad, lonely targets were not observed to be less warm in their conversations with perceivers than not-lonely targets. In effect, the lonely targets did not reciprocate the lesser warmth displayed by the perceivers. There was some evidence that the targets were reacting to the quality of the perceivers' conversations however. In the female perceiver/male target dyads, targets were observed to be less proud when lonely than when not-lonely during a later exchange. These results suggest that the lonely male targets may have been responding to the lesser warmth



of the female perceivers by demonstrating less pride as the conversation progressed.

Perceivers in the not-lonely target conditions demonstrated a more pronounced decrease in nervousness than perceivers in the lonely target conditions. This is paralleled by the finding that targets in the not-lonely condition demonstrated a significant decrease in jitteriness during the fourth exchange of this investigation. These results reveal a modest effect for the complementary nature of perceiver-target interactions. Decreases in perceiver nervousness during the second and third exchanges were followed by a decrease in target jitteriness during the fourth exchange. As nervousness and jitteriness both reflect measures of fear, and as these differences were apparent in same condition of the study, these findings provide modest evidence for the complementary nature of behavioral confirmation.

It was found that perceivers in this study increased in friendliness, sociability, and cooperativeness, and decreased in jitteriness as the conversations progressed. It was also found that targets increased in warmth, friendliness, sociability,

and cooperativeness, while decreasing in nervousness as the conversations progressed. These patterns may simply reflect normal decreases in general arousal and natural inclinations towards congeniality that individuals experience as they become more familiar with one another. Female targets were found to be more jittery than male targets, perhaps reflecting greater social anxiety by the females than the males. Although perceiver-target synchrony was observed with respect to a number of characteristics in all conditions of this experiment, these findings, which are the most common in this study, simply reflect the dynamics involved in becoming acquainted, and not behavioral confirmation specifically.

Subsequent to the conversations, perceivers rated lonely targets as less exciting, less interesting, less warm and less friendly than not-lonely targets. These differences were apparent even though the lonely and not-lonely target did not differ with respect to the observed warmth and friendliness of their conversations. Two potential accounts of this pattern are: (1) the perceivers persisted in their stereotype of the lonely in comparison to not-lonely persons; or

(2) the perceivers cognitively distorted the targets' sides of the conversation such that they were viewed as less warm and friendly when provided by a lonely than not-lonely person. The former account may be considered to suggest that perceivers confirm their expectations by discounting the disconfirming behaviour of their partners. This is consistent with research indicating that person perception is strongly affected by primacy (Anderson, 1981; Burnstein & Schul, 1982; Wyer, 1988); Once an impression of a person is formed, individuals tend to dismiss subsequent disconfirming information. The latter account may be considered to suggest that perceivers confirmed their expectation by distorting the targets' behavior. If this latter process were confirmed it would demonstrate the role that biased processing of ambiguous social information plays in behavioral confirmation.

Subsequent to the conversations, lonely targets tended to rate perceivers as more friendly than did not-lonely targets. This finding is inconsistent with our hypothesis and, in fact, runs counter to expectation. This pattern also is inconsistent with the observed qualities of the conversations; perceivers

were not observed to be more friendly (or warm, cooperative, or sociable etc.) in conversations with the lonely than with the not-lonely target. It is unclear why this difference was found, but the results suggest a moderating variable that was not examined in the context of this study. It should be noted that this difference only approached significance and further research is necessary to examine its reliability.

We hypothesized that warm and friendly perceiver behavior would elicit warm and friendly target behavior. We found, however, that less warm behavior from female perceivers appeared to elicit less proud behavior from lonely male targets. Also, the pattern of decreases in perceiver nervousness paralleled decreases in target jitteriness. Perhaps, reciprocity in the form of exact matching patterns is too a rigid a conceptualization of perceiver-target interactions. A better conceptualization of the observed pattern for the female perceiver/male target conversation is that of "action and reaction", in which less warmth on part of the perceiver elicited less pride from the target. Continued research on the precise nature of the

complementary patterns in the behavioral confirmation process is warranted.

The present findings provided only modest support for the behavioral confirmation of loneliness. An effect was found exclusively for female perceivers interacting with lonely male targets. It is interesting to note that relative to male perceivers, female perceivers did not display a more negative stereotype of the lonely than not-lonely target before the conversations took place. During the interactions, however, female perceivers did demonstrate less warmth toward lonely targets than not-lonely targets. This finding points to a complex process by which stereotypes and corresponding expectations are translated into behavior, specifically confirmatory behaviour. At the outset of this study, male and female targets may have been equally stigmatized by loneliness as targets were unfamiliar to perceivers, and their gender was not salient. During the conversations however, the gender of the targets became more conspicuous which may have triggered the tendency for females to be distinctly harsh with lonely males.

The current investigation is not without its limitations. Independent ANOVAs were conducted for the two main variables of interest, in addition to each of the ancillary variables included in this study. Although the inclusion of several variables provides a thorough picture of the process implicated, the effect of conducting numerous independent ANOVAs is the resultant increase in the likelihood of committing a type I error. The results of the current study should therefore be interpreted cautiously until further investigations can replicate these findings and substantiate the effects observed.

A second limitation concerns the dependent variables. Although these variables appear to possess adequate face validity, the degree to which the single adjectives employed in this investigation accurately capture and reflect the nature of the attitudinal and emotional content of the subjects and observers perceptions has yet to be determined. It should be noted that the adjective lists from the PANAS scale were originally designed as composite, self-ratings the scores on which reflected general levels of positive and negative affect. As no measures were taken to

assess the validity of using these adjectives to reflect particular dimensions of conversations, the question of how well they in fact do so must be considered. Additionally, it should be noted that the author was unable to locate a measure of observer ratings appropriate for the current investigation. Development and validation of such a measure would aid in the investigation of observer-related topics of interest.

The manner in which the manipulation of loneliness was achieved in this study was one among a number of alternatives and involved the presentation of bogus questionnaires to perceivers. In everyday interactions it is highly unlikely that information concerning another person's loneliness would be conveyed in this manner. The question of external validity is thus raised. It is conceivable that the method by which individuals come to acquire insight into another person's affective state may influence subsequent interactions. The present manipulation of loneliness was a potent method of testing behavioral confirmation and served as an effective means of investigating this phenomenon. The generalizability of the current

results, however, are not assured. Bearing this in mind, the consistent findings across studies into the effects of being perceived as lonely seem to suggest that stigmatization in the manner found herein will occur irrespective of the manner in which the loneliness of the other is conveyed.

A final limitation of the current investigation concerns the establishment of inter-rater reliability. Pearson product-moment correlation coefficients were calculated using the data from four subjects as a means of establishing reliability. This small sample of subjects may not provide an accurate indication of the degree to which raters actually agreed on the ratings using the various adjectives. Additionally, Pearson product-moment correlations do not take into account measurement error or the degree to which agreement could be expected by chance. The calculation of intraclass correlations addresses the former problem but the latter is still an issue. The strength of the agreement between raters should be interpreted in light of this limitation.

As suggested by Miller and Turnbull (1986), two of the many factors that probably moderate the expectancy-



behavior link are (a) the perceiver's interaction goals and (b) the perceiver's belief in the target's modifiability. Future studies might further investigate the variables that moderate the behavioral confirmation process, and whether moderating processes are specific to the behavior being induced.

The behavioural confirmation effects observed in the present study regarding loneliness were less pronounced than the behavioral confirmation effects found by Snyder et al. (1977) regarding physical attractiveness. Researchers have noted the important role that the salience of a disability plays in determining the level of stigmatization associated with it (Conant & Budoff, 1983). As a psychological attribute, loneliness is not as observable as physical attractiveness which is a physical attribute. Consequently, loneliness may be less likely to produce strong behavioral confirmation effects than physical attractiveness. Furthermore, it is possible that perceivers may have had mixed feelings about interacting with someone they considered to be lonely which may have undermined the behavioral confirmation effects. In future investigations researchers might

consider assessing perceiver's feelings about interacting with lonely persons and whether they affect the behavioral confirmation process.

Researchers have found that a targets' personality and self-concept can play a significant role in behavioral confirmation. The relative certainty one has with respect to aspects of one's self-concept can affect the behavioral confirmation process (Swann & Ely, 1984), as can the view one holds of oneself (Swann & Read, 1981). Behavioral confirmation regarding loneliness may be affected by the target's actual loneliness. In particular, behavioral confirmation of loneliness may be more likely found when targets are lonely rather than not-lonely. In future experiments researchers might consider assessing the influence of target characteristics on the behavioral confirmation process.

In this investigation audio tapes of the conversations were used to analyze the interactions. As such, information about most aspects of non-verbal behavior was necessarily precluded from analysis. Future investigations might consider video taping sessions as a means of subsequently examining non-

verbal communication patterns which may reveal meaningful differences between individuals interacting with stigmatized and not-stigmatized others.

Future studies might also consider investigating the complimentary nature of the behavioral confirmation process by specifically examining how perceivers and targets behavior might influence segments of interactions which immediately succeed each other. Such an analysis would reveal subtle differences which may not have been apparent in this investigation.

**References**

Anderson, N. H. (1981). Foundations of information integration theory. New York: Academic Press

Andersen, S. M., & Bem, S. L. (1981). Sex typing and androgyny in dyadic interaction: Individual differences in responsiveness to physical attractiveness. Journal of Personality and Social Psychology, 1, 74-86.

Bartko, J. J. (1966). The intraclass correlation coefficient as a measure of reliability. Psychological Reports, 19, 3-11.

Bond, M. H. (1972). Effect of an impression set on subsequent behavior. Journal of Personality and Social Psychology, 24, 301-305.

Borys, S. & Perlman, D. (1985). Gender differences in loneliness. Personality and Social Psychology Bulletin, 11, 63-74.

Burnstein, E., & Schul, Y. (1982). The informational basis of social judgements: Operations in forming an impression of another person. Journal of Experimental Social Psychology, 18, 217-234.

Caprara, G. V., Barbaranelli, C., & Livi, S. (1994). Mapping personality dimensions in the big five model. Special issue: the big five model of personality in Europe. European Review of Applied Psychology, 44(1), 9-15.

Chadha, N. K., & Chandna, S. (1985). A factor analytic study of the dimensions of temperament. Perspectives in Psychological Researches, 8(2), 17-22.

Christensen, D., & Rosenthal, R. (1982). Gender and nonverbal decoding skill as determinants of interpersonal expectancy effects. Journal of Personality and Social Psychology, 42(1), 75-87.

Conant, S., & Budoff, M. (1983). Patterns of awareness in children's understanding of disabilities. Mental Retardation, 21, 119-125.

Dion, K. K., Berschied E., & Walster, E. (1972). What is beautiful is good. Journal of Personality and Social Psychology, 24, 285-290.

Farina, A., Allen, J. G., & Saul, B. B. (1968). The role of the stigmatized person in affecting social relationships. Journal of Personality, 36, 169-182.

Fazio, R. H., Effrein, E. A., & Falender, V. J. (1981). Self-perceptions following social interaction. Journal of Personality and Social Psychology, 2, 232-242.

Good, L. R. (1977). Perceived value of personality characteristics. Perceptual and Motor Skills, 44(2), 590.

Ickes, W., Patterson, M. L., Rajecki, D. W., & Tanford, S. (1982). Behavioral and cognitive consequences of reciprocal versus compensatory responses to preinteraction expectancies. Social Cognition, 1(2), 160-190.

Jones, W. H. (1982). Loneliness and social behavior. In L. A. Peplau, & D. Perlman (Eds.). Loneliness A Sourcebook of Current Theory Research and Practice (pp. 238-252). New York: John Wiley and Sons.

Jones, W. H., Hobbs, S. A., & Hockenbury, D. (1982). Loneliness and social skills deficits. Journal of Personality and Social Psychology, 42(4), 682-689.

Lau, S. (1989). Sex role orientation and domains of self-esteem. Sex Roles, 21, 415-422.

Lau, S., & Gruen, G. E. (1992). The social stigma of loneliness: Effect of target person's and perceiver's sex. Personality and Social Psychology Bulletin, 18(2), 182-189.

Merton, R. K. (1948). The self-fulfilling prophesy. Antioch Review, 8, 193-210.

Miller, D. T., & Turnbull, W. (1986). Expectancies and interpersonal processes. Annual Review of Psychology, 37, 233-256.

Mills, D. N. (1976). A procedure for explaining experiments involving deception. Personality and Social Psychology Bulletin, 2, 3-13.

Riggs, J. M., Monach, E. M., Ogburn, T. A., & Pahides, S. (1983). Inducing self-perceptions. Personality and Social Psychology Bulletin, 9(2), 253-260.

Rosenthal, R., & Jacobson, L. (1968). Pygmalion in the classroom. New York: Holt Rinehart & Wilson.

Rotenberg, K. J., Bartley, J. L., & Toivonen, D. M. (1993). Children's stigmatization of loneliness. Unpublished manuscript, Lakehead University, Thunder Bay.

Rotenberg, K. J., & Kmill, J. (1992). Perception of lonely and non-lonely persons as a function of individual differences in loneliness. Journal of Social and Personal Relationships, 9, 325-330.

Sansone, C., Jones, W. H., & Helm, B. (1979, April). Interpersonal perceptions of loneliness. In S. A. Hobbs (Chair), Social skills assessment and intervention. Symposium presented at the annual meeting of the Southwestern Psychological Association, San Antonio, Texas.

Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlation: Uses in assessing rater reliability. Psychological Bulletin, 86(2), 420-428.

Sloan, W. W., Jr., & Solano, C. H. (1984). The conversational styles of lonely males with strangers and roommates. Personality and Social Psychology Bulletin, 10, 293-301.

Snyder, M., & Swann, W. B. (1978). Behavioral confirmation in social interaction: From social perception to social reality. Journal of Experimental Social Psychology, 14, 148-162.



- Solano, C. H., Batten, P. G., & Parish, E. A. (1982). Loneliness and patterns of self-disclosure. Journal of Personality and Social Psychology, 43(3), 524-531.
- Strassberg, D. S. & Anchor, K. N. (1975). Rating intimacy of self-disclosure. Journal of Personality and Social Psychology, 43, 524-531.
- Strypnek, B. J., & Snyder, M. (1982). On the self-perpetuating nature of social stereotypes about women and men. Journal of Experimental Social Psychology, 18, 277-291.
- Swann, J. B., Jr. & Read, S. J. (1981). Self-verification processes: How we sustain our self-conceptions. Journal of Experimental Social Psychology, 17, 351-372.
- Swann, W. B., Jr. & Snyder, M. (1980). On translating beliefs into action: Theories of ability and their application to an instructional setting. Journal of Personality and Social Psychology, 6, 879-888.
- Ulrich, R. E., Stachnik, T. J., & Stainton, N. R. (1963). Student acceptance of generalized personality interpretations. Psychological Reports, 13, 831-834.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. Journal of Personality and Social Psychology, 54, 1063-1070.

Word, C. O., Zanna, M. P., & Cooper, J. (1974). The nonverbal mediation of self-fulfilling prophecies in interracial interaction. Journal of Experimental Social Psychology, 10, 109-120.

Wyer, R., S., Jr. (1988). Social memory and social judgement. In P. R Soloman, G. R. Goethals, C. M. Kelly, & B. R. Stephens (Eds), Perspectives on Memory Research. New York: Springer-Verlag.

**Appendix A**  
**Biographical Information Questionnaire**

Please answer the following questions.

First Name \_\_\_\_\_

Age \_\_\_\_\_

Sex \_\_\_\_\_

First Language \_\_\_\_\_

Marital Status \_\_\_\_\_

How long have you lived in Thunder Bay? \_\_\_\_\_

Year Level at Lakehead \_\_\_\_\_

Major in school \_\_\_\_\_

Minor in school \_\_\_\_\_

Date of Birth \_\_\_\_\_

Place of Birth \_\_\_\_\_

**Appendix B**

**Loneliness Manipulation Questionnaire**

Please answer the following questions

Al = Always      So = Sometimes      Ra = Rarely      N = Never

1.I like variety and change in life.	Al	So	Ra	N
2.I feel in tune with people around me.	Al	So	R	N
3.I am an independent thinker.	Al	So	R	N
4.I feel part of a group of friends.	Al	So	R	N
5.I am honest with people.	Al	So	R	N
6.I am a lonely person	Al	So	R	N
7.Sometimes I doubt whether I have made the right decisions.	Al	So	R	N
8.There are people I can talk to.	Al	So	R	N
9.There are people I feel close to.	Al	S	R	N

**Appendix C**  
**Conversation Topics**

Low intimacy (These headings do not appear on the actual sheet)

Discuss you and your partner's hobbies.

Describe your physical appearances.

Discuss your daily routines

Medium Intimacy

Discuss your life plans (ambitions, goals, aspirations).

Discuss what sometimes annoys each of you.

Discuss both of your likes and/or dislikes.

High Intimacy

Discuss a specific time you've each experienced a very intense emotion.

Discuss some of your strengths and/or weaknesses that really affect the way you view yourselves.

Discuss why each of you considers someone to be your best friend.



**Appendix D**  
**Bipolar adjective checklist**

Please indicate, using the following pairs of characteristics, your honest impression of what the person you have just spoken with is like. Rest assured that your responses will be completely confidential.

altruistic	-3	-2	-1	0	1	2	3	selfish
conventional	-3	-2	-1	0	1	2	3	unconventional
exciting	-3	-2	-1	0	1	2	3	dull
stable	-3	-2	-1	0	1	2	3	unstable
emotional	-3	-2	-1	0	1	2	3	unemotional
dependent	-3	-2	-1	0	1	2	3	independent
safe	-3	-2	-1	0	1	2	3	dangerous
interesting	-3	-2	-1	0	1	2	3	boring
genuine	-3	-2	-1	0	1	2	3	ungenuine
sensitive	-3	-2	-1	0	1	2	3	insensitive
outgoing	-3	-2	-1	0	1	2	3	shy
sincere	-3	-2	-1	0	1	2	3	insincere
warm	-3	-2	-1	0	1	2	3	cold
sociable	-3	-2	-1	0	1	2	3	unsociable
lonely	-3	-2	-1	0	1	2	3	not lonely
competitive	-3	-2	-1	0	1	2	3	cooperative
kind	-3	-2	-1	0	1	2	3	mean
modest	-3	-2	-1	0	1	2	3	conceited
strong	-3	-2	-1	0	1	2	3	weak
serious	-3	-2	-1	0	1	2	3	jovial
simple	-3	-2	-1	0	1	2	3	complicated
poised	-3	-2	-1	0	1	2	3	boorish

bold	-3	-2	-1	0	1	2	3	meek
sophisticated	-3	-2	-1	0	1	2	3	simple
friendly	-3	-2	-1	0	1	2	3	unfriendly
enthusiastic	-3	-2	-1	0	1	2	3	sedate
attractive	-3	-2	-1	0	1	2	3	unattractive
trustworthy	-3	-2	-1	0	1	2	3	untrustworthy

**Appendix E**  
**PANAS Scale and Added Items**

**PANAS Scale Items**

1 = very slightly or not at all, 2 = a little, 3 = moderately,  
4 = quite a bit, 5 = extremely

interested	irritable
distressed	alert
excited	ashamed
upset	inspired
strong	nervous
guilty	determined
scared	attentive
hostile	jittery
enthusiastic	active
proud	afraid

**Additional Items**

sincere	warm
sociable	kind
friendly	cooperative

**Appendix F**  
**Manipulation Check Questionnaire**

Based on the information you received of your partner how would you describe him/her along the following dimensions?

friendly	-3	-2	-1	0	1	2	3	unfriendly
lonely	-3	-2	-1	0	1	2	3	not lonely
happy	-3	-2	-1	0	1	2	3	unhappy
confident	-3	-2	-1	0	1	2	3	unconfident
reserved	-3	-2	-1	0	1	2	3	outgoing

**Appendix G**  
**Consent Form**



## Consent Form

RESEARCH STUDY CONDUCTED IN THE DEPARTMENT OF PSYCHOLOGY AT  
LAKEHEAD UNIVERSITY ON BEHALF OF DR. KEN ROTENBERG.

We would like you to participate in a study that examines interpersonal communication, that is the ways in which people interact with one another.

1. I understand that the purpose of the present study is to examine some of the variables that can influence interpersonal interactions.
2. I understand that I will have to fill in questionnaires.
3. I understand that I will be required to engage in a short conversation with another person.
4. I understand that the conversation will be audio tape recorded.
5. I understand that any information collected about me in this study will be completely confidential.
6. I understand that I will receive one (1) hour of course credit for my participation in this experiment.
7. I understand that my participation is completely voluntary and that I am free to withdraw my consent and discontinue my participation at any time, with no penalty, even after signing this form.
8. I understand that the data from this study may be published (not in the form of individual data but in the form of group data only). I understand that I will not be identified in any way.
9. I understand that in the current study there is no danger of physical or psychological harm.
10. I understand that I will be able to ask any questions regarding my participation in this study to which I can expect a satisfactory answer.
11. I understand that I am participating in this study solely to advance our understanding of variables that can affect interpersonal interactions and that the study has no further motive with which I have not been acquainted.

I HAVE CAREFULLY READ AND I UNDERSTAND THIS AGREEMENT, AND THEREFORE I FREELY CONSENT AND AGREE TO PARTICIPATE IN THE STUDY.

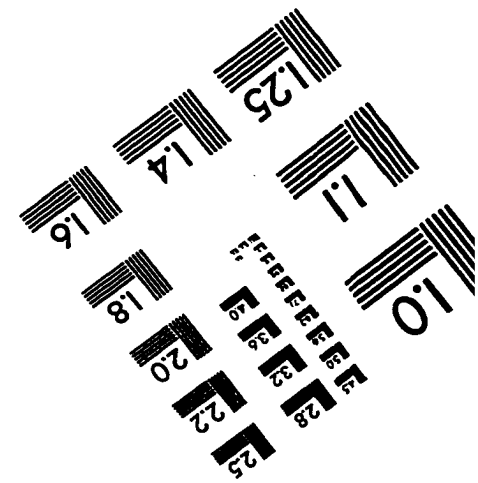
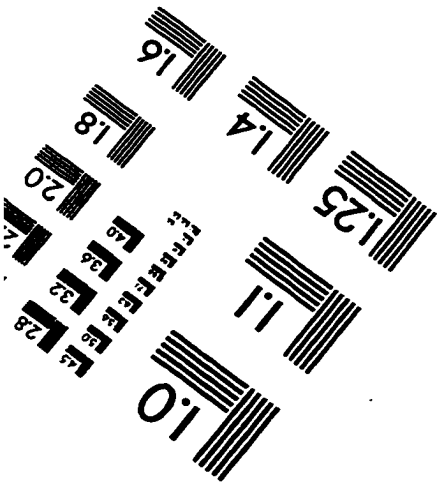
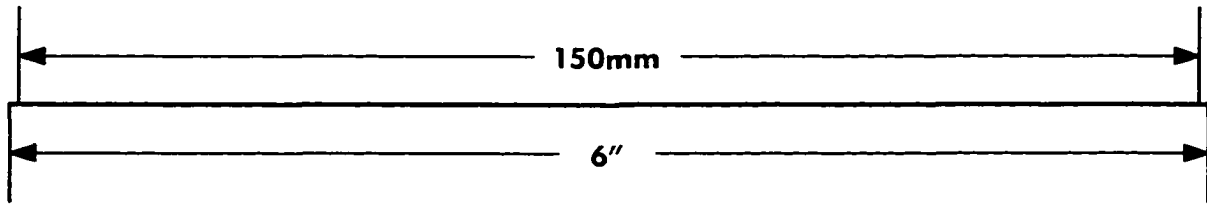
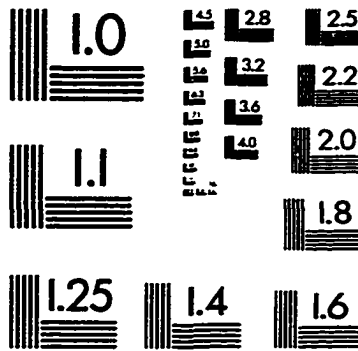
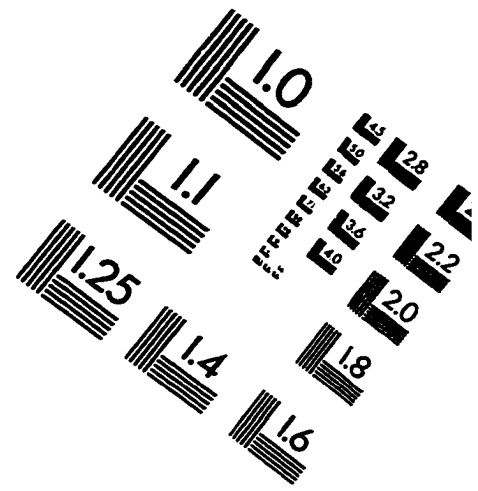
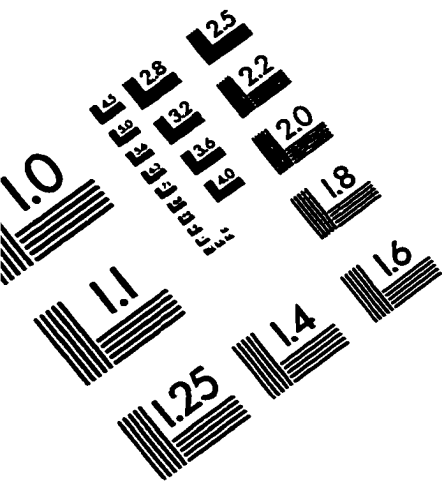
NAME (PLEASE PRINT) \_\_\_\_\_

SIGNATURE \_\_\_\_\_

EXPERIMENTER'S SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_

# IMAGE EVALUATION TEST TARGET (QA-3)



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