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The Effects of Loneliness and Attribution
of Causation on Self-Focus, Attention
and Recall

by

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Abstract

This study examined the effects of loneliness and attribution of causation of loneliness on self-focus, attention, and recall of self-referent and non-self-referent material. One hundred and eighty Introductory Psychology students were categorized into nonlonely, 'internal' lonely, and 'external' lonely groups on the basis of their score on the UCLA Loneliness Scale and a question determining whether they attributed their loneliness to internal or external sources. The three groups were compared with respect to the number of sentences constructed beginning with "I" or "WE" on the Pronoun Sentence Completion Form (measuring self-focus), recall of series of numbers in a Digit Span test (measuring attending behavior) and recall of a speech (measuring recall of non-self-referent material) or recall of items on a personality-interest inventory (measuring recall of self-referent material). Contrary to expectation, nonlonely subjects were more self-focused than lonely subjects, while the hypothesis that lonely subjects are less attentive than nonlonely subjects was supported when the data were reanalyzed using more extreme scores on the loneliness scale. No other tests of the hypotheses were significant. Results regarding self-focus were explained in terms of self-disclosure and self-esteem studies, and also in terms of the measure itself. The results of the attentiveness and recall measures were explained in terms of Eysenck's (1979) reformulation of the effects of anxiety on performance.

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Introduction

Loneliness is a common and distressing (Weiss, 1973; Gordon, 1976)--perhaps even life threatening--condition. Durkheim (1951), for instance, has linked an individual's lack of integration into some social group, such as a church or family, with suicide. Loneliness is a widespread phenomenon that seems to hit people of all ages and at all socioeconomic levels. In a national survey, one quarter of all Americans reported having felt lonely in the past few weeks (Bradburn, 1969). Empirical research on loneliness, however, has only recently begun, and is still sparse.

One of the more useful ways of looking at loneliness has been through a cognitive analysis (Peplau, Russell and Heim, 1979). The cognitive approach defines loneliness, not as social isolation per se, but as a state of perceived social deficiency in which a person's network of social relationships is smaller than he or she would desire (see Peplau and Caldwell, 1978).

Altman's (1975) conception of privacy is intimately related to loneliness. In his analysis, he views crowding (achieved privacy less than desired privacy) as being at opposite ends along the same continuum as what he refers to as 'social isolation', or what has been defined here as loneliness (achieved privacy more than desired privacy). Both crowding and loneliness are seen as a breakdown in achievement of desired levels of social contact. The effects of crowding, however, would seem to be less severe and of a different type than the effects of loneliness. Mild annoyances and some stress have been reported in sociological studies (Altman, 1975), whereas loneliness has been linked with dissatisfaction (Rubenstein,

Shaver, and Peplau, 1979), boredom (Weiss, 1973), anxiety (Moustakas, 1961), depression (Ortega, 1969), and suicide (Durkheim, 1951).

Defining loneliness as a discrepancy between desired and achieved social contact allows it to be a temporary state, as well as a pervasive and enduring condition. Various precipitating factors may include a breakup of a close emotional relationship by death or divorce, physical separation from family and friends, status changes such as retirement, and reduced satisfaction in the quality of a relationship as would be the case in marital discord. Another possible precipitating factor in becoming lonely is a change in one's expectations of social contact, such as expecting to meet and become friends with many new people at university (Peplau, Russell and Heim, 1979; Perlman and Peplau, 1979). It seems important to note that the objective state of social isolation need not result in loneliness in cases where social isolates adjust their expectations of social participation to a level which more closely approximates their reality. Lowenthal (1964) in fact found that elderly people with a long history of social isolation were less lonely than those with higher levels of social contact.

Various personality characteristics have been found to have some relationship to loneliness. Shyness is significantly correlated with loneliness (Zimbardo, 1977), and, along with low social risk-taking, lack of assertiveness and self-consciousness in a social setting, may contribute to loneliness (Perlman and Peplau, 1979). Loneliness, however, is not synonymous with these personality characteristics, as one study reports a correlation of .50 between shyness and loneliness, and a correlation of .45 between social anxiety and loneliness (Jones, Freemon, and Goswick, in press) instead of

correlations of close to unity as one would expect if what we consider here to be loneliness was in fact the same concept as shyness or social anxiety.

Another characteristic often associated with loneliness is lack of self-esteem. Again, however, the correlation between self-esteem and loneliness has been reported to be $-.45$ (Jones et al., in press), providing evidence that the two concepts are distinct from each other.

Loneliness is also distinct from lack of social skills, since, although they are often related, this relationship is not inevitable. Sisenwein (Note 1) found no relationship between self-reported loneliness and dating status or frequency of receiving mail from family and friends. Loneliness thus appears to be a separate entity, appropriate for empirical study.

In a cognitive analysis of loneliness, the person's attributions for his or her loneliness become important. Weiner's (1974) attributional framework has been adapted to apply to loneliness (Peplau et al., 1979; Peplau and Caldwell, 1978; Perlman and Peplau, 1979). In this analysis there are three perceived dimensions of loneliness: internal/external, stable/unstable, and controllable/uncontrollable. The discussion and experimental manipulations which follow will centre on locus of causality, which is the internal/external dimension. This dimension refers to whether or not the lonely person takes personal responsibility for his or her loneliness. Internal causes include physical attractiveness, shyness, and lack of social skills; whereas external causes of loneliness include lack of opportunity for developing social

relationships and lack of interest by others.

Attributions for loneliness have implications on various aspects of the lonely person's lifestyle and personality (Peplau and Caldwell, 1978). There are indications that individuals who ascribe their loneliness to stable causes are more hopeless about the future than those who attribute their loneliness to unstable causes. Depression is often seen in those who attribute their loneliness to internal, stable sources. It has also been suggested that low self-esteem is associated with internal attributions for loneliness. There is, finally, evidence to suggest that those lonely people with internal, unstable attributions for their loneliness have more effective, active coping skills.

One of the more interesting factors which may be related to loneliness is self-focus. Self-report measures indicate that lonely people consider themselves to be more self-conscious than others (Jones et al., in press), and objective measures indicate that lonely people do, in fact, make significantly more self-references and ask few questions of their conversation partners, thus indicating that lonely people interact with less awareness of others, less responsiveness and in a more self-focused manner (Hockenbury, Kranau, Jones and Hobbs, Note 2). In another study it was discovered that, although situationally lonely people were more successful at communication sending than chronically lonely or nonlonely people, they were no better as communication receivers (Gerson and Perlman, 1979). This was attributed by the researchers to a greater degree of self-focus in the interaction patterns of lonely people.

It was therefore hypothesized that lonely people would

demonstrate a greater degree of self-focus as measured by a greater number of self-references on a sentence completion task.

One would also expect the direction of the causal attribution adopted by the individual to have an influence on the degree of self-focus of that subject. Since loneliness is a rather distressing condition, it seems reasonable to expect lonely people to spend time thinking about and focusing on those specific sources to which they attribute their loneliness. The person with internal attributions of causation would focus on those aspects of themselves which they consider to be the reasons for their loneliness. It also seems reasonable to believe that this focus on specific aspects of oneself may develop into a focus on the self in general. It was therefore hypothesized that those individuals who considered the cause of their loneliness to be internal would be demonstrated to be more self-focused than those individuals who considered the cause of their loneliness to be external in nature.

Although self-focus of lonely people has never been systematically studied, the effect of self-focus in shy people has been looked at. It was discovered that recall is impaired when shy individuals are performing an unstructured task consisting of processing complex information in a socially evaluative setting. This they attributed to the self-focus of the shy, and supported this explanation with the added finding that nonshy individuals, upon being induced to focus on their internal functioning as well as on task-relevant information displayed a similar decrement in recall (Hatvany, Silva and Zimbardo, Note 3).

If these researchers are correct in attributing these problems

in recall to self-focus, the same types of problems should be seen in lonely people, since evidence would seem to indicate that they are also self-focused. Given an unstructured, complex recall task in a socially evaluative setting, it was therefore hypothesized that lonely individuals would demonstrate a deficit in recall when compared to nonlonely people. The same sort of mechanisms that apply to shy people should hold for lonely people, that is, social evaluation anxiety in an unstructured setting is more closely monitored and thus more arousing and distracting for those individuals who are more self-focused (such as the shy and lonely individuals) than for less self-focused individuals. Lonely people may, in fact, be more generally distractable. A recent study demonstrated that lonely subjects had more difficulty learning paired associates when distracting music was being played than their nonlonely counterparts (Florentine, Perlman and McIntyre, Note 4).

Under this type of explanation, if the situation is not socially evaluative, there should be no evaluation anxiety to be monitored, and without this distraction, the lonely individuals would show no decrement in their performance of the recall task. This is partially supported by the fact that in the Hatvany et al. study, the shy subjects demonstrated no deficit in recall in the nonsocially evaluative setting. A socially evaluative setting, therefore, would seem to be important in studying recall in lonely people.

Given that lonely people with internal attributions of causation are expected to be more self-focused than those with external attributions, it would also seem reasonable to expect that those 'internal' people would demonstrate a greater deficit in recall under

socially evaluative settings than 'external' people, since a greater degree of self-focus is likely to lead to greater monitoring of social evaluation anxiety, and thus more distraction leading to a deficit in recall.

One aspect of self-focus that has never been studied is its effects on awareness of internal kinds of events, such as emotions and one's own reactions to external events and people. If self-focus in a socially evaluative setting leads to greater self-monitoring, it should then result in a greater awareness and better recall of events relating to oneself. It was therefore hypothesized that lonely individuals, when in a socially evaluative, nonstructured setting, would demonstrate greater recall of self-referent material than nonlonely people.

It was also hypothesized that the 'internal' lonely individuals would demonstrate greater recall of self-referent material in a socially evaluative setting, than 'external' individuals, since the former should show more self-focus and thus more self-monitoring than the latter.

A function somewhat related to recall is attention. Although it is admittedly a poor test of general intelligence, low scores on the Digit Span subtest of the Wechsler Adult Intelligence Scale are strongly related to inattention (Matarazzo, 1972). Since lonely people are presumably focusing mainly on themselves, they should therefore be less attentive to their environment than nonlonely people. It was therefore hypothesized that lonely people would manifest a deficit in attention as indicated by achieving a lower score on the Digit Span subtest than nonlonely people; and that

following similar reasoning, lonely people with internal attributions of causation would demonstrate less attentiveness than lonely people with external attributions of causation.

Summary of Hypotheses

In total there were three sets of hypotheses, two hypotheses in each of the first two sets and four hypotheses in the third set.

First Set

1. Lonely people are more self-focused than nonlonely people.
2. Lonely people with internal attributions of causation are more self-focused than those with external attributions of causation of loneliness.

Second Set

1. Lonely people attend less than nonlonely people.
2. Lonely people with internal attributions of causation attend less than lonely people with external attributions of causation of loneliness.

Third Set

1. Lonely people manifest a deficiency in recalling external events as compared with nonlonely people in a socially evaluative, unstructured setting.
2. Lonely people with internal attributions of causation manifest greater deficiencies in recalling external events in a socially evaluative nonstructured setting than lonely people with external attributions of causation.
3. Lonely people have greater recall of self-referent material than nonlonely people in socially evaluative, nonstructured settings.
4. Lonely people with internal attributions of causation have

greater recall of self-referent material than lonely people with external attributions of causation in socially evaluative, nonstructured settings.

Method

Overview

Subjects were selected and categorized into three groups; lonely, 'internal' lonely and 'external' lonely, on the basis of two parameters: the UCLA Loneliness Scale, and a question to determine direction of attribution of causation of loneliness. Upon reporting to the laboratory, all subjects in each loneliness group first completed a Pronoun Sentence Completion Form. After this task, six (one-half) of the testing groups were presented with a videotaped speech and the other half of the testing groups were given a personality and interest inventory. So that subjects would believe that they were going to be the objects of social evaluation, prior to the presentation of the videotape (personality inventory) subjects were told that they would subsequently be broken into groups of three to discuss the speech (get better acquainted).

All subjects were then given a Digit Span test, after which they did the appropriate recall task, that is, they answered questions on the speech or recalled inventory items. The Pronoun Sentence Completion Form provided a measure of self-focus, the Digit Span test provided a measure of attention, and the two recall tests provided measures of learning on external and self-referent materials, respectively.

The first set of hypotheses was tested using a 3X2 ANOVA design with loneliness grouping and sex as the independent variables and with the number of sentences beginning with personal (self-referent) pronouns, that is, "I" or "WE", constructed in a Pronoun Sentence Completion Task as the dependent measure. The second set of

hypotheses was also tested using a 3X1 ANOVA design with loneliness grouping as the independent variable, and number of digits 'forward' remembered as a test of Digit Span. The third set of hypotheses was tested using a 3X2 fixed effects ANOVA design with loneliness grouping and type of task as independent variables. The dependent variable corresponding to the 'external' task was the number of questions answered correctly about a videotaped speech, and the dependent variable corresponding to the 'internal' task was the number of self-referent questions recalled after their presentation on a questionnaire.

Subjects and Subject Classification

Approximately 1000 male and female students taking Introductory Psychology at the University of Manitoba were screened for participation in this study by filling out the UCLA Loneliness Scale and answering a question about what they attributed their loneliness to. By serving in this study, subjects partially fulfilled a course research participation requirement. Of the approximately 500 eligible students, about 1/3 were willing and available to participate as a subject. A final sample of 180 subjects was classified into three groups; nonlonely ($N=60$), 'internal' lonely ($N=60$) and 'external' lonely ($N=60$), on the basis of their responses to the independent variable pretesting measures.

Each loneliness group was further subdivided on a random basis into two halves (N per group = 30), each with approximately the same number of male and female subjects. One half was administered the 'self-referent' task, and the other half was administered the 'non-self-referent' task. Subjects were tested in groups of 20 to 30

subjects each. Each testing group consisted of approximately the same number of nonlonely, 'internal' lonely and 'external' lonely subjects.

Independent Variables

The UCLA Loneliness Scale (Russell, Peplau and Ferguson, 1978), used in screening subjects, consists of 20 general items to which the subject indicates that he or she "often", "sometimes", "rarely" or "never" feels this way (Appendix A). The answers are given 4, 3, 2, or 1 points respectively. The lowest score possible is 20, and the highest score possible is 80, indicating nonlonely and very lonely extremes respectively. A sample item is:

"I have nobody to talk to."

The test was reported by its developers to have high internal consistency (coefficient alpha = .96) and test-retest correlation over a two-month period was .73. Concurrent validity of this scale was demonstrated by a correlation between a subjective self-report question about current loneliness and UCLA Loneliness Scale of .79, and by a significant difference in mean scores between control subjects and those people who felt troubled enough by loneliness that they volunteered for a three-week clinic/discussion program. Further validation is provided by correlations of scores on the UCLA Loneliness Scale with such theoretically related constructs as depression, anxiety, boredom, dissatisfaction, unhappiness, shyness and feelings of emptiness. Loneliness Scale scores did not correlate with self-ratings of irrelevant adjectives such as "hard-working" and "wide range of interests" (Russell et al., 1978).

The UCLA Loneliness Scale was chosen over several alternative scales. One scale which has been subjected to examination for its validity and reliability is the ABLS (Abbreviated Loneliness Scale) developed by Ellison and Paloutzian (Note 5). Its internal consistency was lower than that of the UCLA Loneliness Scale, with coefficient alpha of .67, compared to that of the UCLA Scale which had a coefficient alpha of .96. Test-retest correlation for the ABLS was slightly higher at .85 than that of the UCLA Scale (which had a correlation of .73) but the ABLS test-retest was taken over a one-week period, whereas that of the UCLA Scale was taken over a two-month period. The ABLS Scale's validity measures were also lower, with the correlation between test score and self-reported loneliness being .61, compared to the correlation between UCLA test score and self-reported loneliness of .79.

Another loneliness scale which has received close scrutiny with respect to reliability and validity is the Belcher Extended Loneliness Scale (Belcher, Note 6). In a comparison of the two scales, Solano (1980) concluded that both the UCLA Loneliness Scale and Belcher's Loneliness Scale have high internal consistency, high test-retest reliability, and both correlate well with a single question relating to global loneliness. The UCLA Scale, however, appears to identify a subjective lack of social companionship, which seems to be the definition of loneliness used by college students. The Belcher Scale seems to be more sensitive to philosophically and politically determined forms of loneliness, and to be more related to more pathological forms of loneliness such as depression and anxiety, than the UCLA Scale.

All things taken into account, the more desirable length and easier accessibility of the UCLA Scale, the fact that the scale seems to identify and measure those aspects of loneliness most relevant to this study, as well as the high reliability and validity measures, the UCLA Loneliness Scale seemed to be the most suitable screening device for this study.

A revised version of the UCLA Scale has been developed recently (Russell, Peplau and Catrona, in press). It has the added advantage of eliminating the possible "yea-saying" type of social desirability effects by not coding items all the same way. It was, however, not yet available to the author at the time this present study was being initiated, so the original version of the scale was used. The two versions correlate very highly at $r = .92$.

Those subjects who scored below 30 on the UCLA Loneliness Scale became members of the nonlonely group, with an average score of 24.9. Those subjects who scored above 40 on the scale became members of the lonely group. Mean score in this group was 50.4. These cut-off scores were chosen because of studies indicating average scores for college students of 36 or 37 (Russell et al., 1978).

The question given to the subjects to determine externality or internality of attribution of causation was: "If you have been feeling lonely lately, has your loneliness been primarily due to something about you or something about your situation?"

due to self	due to situation
1.....2.....3.....4.....5.....6	

The left half of the scale indicated internal, while the right half of the scale indicated external attributions of causation. A structured scale measure was chosen for measuring causal attribution

because of research done by Elig and Frieze (1979). They demonstrated the superiority of rating scales over open-ended questions and percentage ratings in situations like this where hypotheses of particular causal attributions are being tested.

The lonely subjects who had internal attributions of causation of loneliness became members of the 'internal' lonely group, while the lonely subjects who had external attributions of causation became members of the 'external' lonely group. This provided 60 subjects in each of the nonlonely, 'internal' lonely and 'external' lonely groups.

Tasks and Dependent Measures

To test the self-focus of nonlonely and lonely individuals, the hypotheses in Set 1, a Pronoun Sentence Completion Form (Appendix B) was used. Each question in the scale consisted of a given verb, and a choice of six pronouns. The subject was required to write a sentence for each item, using the given verb and one pronoun. A sample question of the Pronoun Sentence Completion Form is:

ATE

WE THEY I HE YOU SHE

A sample answer would be:

"He ate the cake."

This Pronoun Sentence Completion Form has 60 items. Examination of its validity has yielded a correlation of $r(53) = .35$ at $p < .005$, between this scale and self-consciousness (Spinner and Adair, Note 7).

A Digit Span task similar to the one on Wechsler's Adult Intelligence Scale was administered to the subjects. Five series of numbers ranging from four to eight digits in length were read out by