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Chapter 12

The Prototype of a Lonely Person

**Leonard M. Horowitz, Rita de S. French,
and Craig A. Anderson**

The concept of the lonely person is not well defined. Its meaning varies somewhat from person to person, and people seem to apply different standards when they judge loneliness in themselves and in others. Therefore, when people say "I feel lonely," their intended meanings are not precise. Three people beginning psychotherapy with a complaint of loneliness may have quite distinct problems in mind: One may be experiencing an awkwardness in initiating social contacts, another may be experiencing deep feelings of inferiority and inadequacy, a third may be experiencing existential feelings of separateness and alienation.

Because of this diversity in meaning, some method is needed that not only describes the "average" meaning but also allows us to describe variability in people's usage. Our goal in this chapter is to provide such a description. We will describe the major features of a lonely person and show how these features can be organized into a "cognitive structure." This organized set of features will comprise the prototype of a lonely person, which will describe the "average meaning" of the concept and also allow us to characterize variability in its usage.

OVERVIEW

Let us begin with five propositions about loneliness that we shall then develop more fully. The propositions are organized around the concept of a prototype, and after the overview has been presented, we shall systematically elaborate each of the propositions with supporting data.

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The Lonely Person as a Prototype

First, we propose that a lonely person should not be conceptualized in terms of a traditional *trait* or *type*, but rather in terms of the more contemporary concept of a "fuzzy set." This more modern conception can be used to describe a theoretically ideal "lonely person," or prototype, a standard against which real people can be evaluated. We know that lonely people in general feel cut off from others and unable to connect socially, but other characteristic feelings, thoughts, and behavior need to be examined that also contribute to the experience of loneliness and to different people's conceptions of a lonely person. We shall also ask whether lonely people and nonlonely people produce the same prototype when they describe their conceptions of a lonely person.

The Prototype and Judgments of Loneliness

Second, we propose that disagreements about loneliness (and unreliability in judging loneliness) can be clarified through the concept of a prototype. If a person is described by *many* prototypic features, then the person is easily judged to be lonely and different observers agree with each other about the loneliness. But *disagreement* (and lower reliability) seem to arise when the description of the person contains fewer prototypic features. We shall present empirical data to show that judges perceive an individual as lonelier—and agree with each other more—when the person is described by many prototypic features.

Relation Between Loneliness and Depression

Third, we propose that the prototype of a lonely person is itself nested within the prototype of a depressed person. That is, the major features of a lonely person are a subset of those of a depressed person. This relationship implies that it is more probable for a lonely person to complain of feeling depressed than for a depressed person to complain of feeling lonely.

Loneliness and Interpersonal Problems

Fourth, we propose that a symptom like loneliness implies specific interpersonal problems that are included in the prototype. Indeed the adjective "lonely" is part of a cluster of adjectives that seem to correspond to a cluster of interpersonal problems over socializing. We shall therefore examine the correspondence between these two classes of psychiatric complaint in an effort to articulate the interpersonal problems of people who feel lonely. We shall also consider misleading similarities that can exist between adjectives

like "lonely" and "passive" that have very different interpersonal or behavioral origins.

The Meaning of "I Can't" in Interpersonal Problems

Fifth, we propose that interpersonal problems that are part of the prototype of a lonely person reflect a lack of interpersonal competence. Interpersonal problems often take the general form "I can't (do something interpersonal)," yet the phrase "I can't" is ambiguous. At times, "I can't" denotes a lack of competence, but at other times it denotes an inhibition over behaving in some way that means "I can't bring myself to." However, certain features of the prototype suggest that the lonely person's problems involve a lack of competence. If this interpretation is correct, then two consequences should follow. The person should attribute interpersonal failures to a lack of ability, and second, a lack of ability should be evident from the person's performance on a task of interpersonal ability. Data will be presented that support both of these hypotheses.

Let us now turn to the concept of a prototype as applied to these propositions about loneliness.

THE LONELY PERSON AS A PROTOTYPE

Recent research in cognitive psychology has focused on the "prototype" as a way of defining a concept or category. A prototype is a theoretical notion consisting of the most common features or properties of members of a category. All of these properties characterize at least *some* members, but in actual practice, no one property is either necessary or sufficient for membership in that category.

At one time it was fashionable to define a category in terms of a discrete set of features that were individually necessary and jointly sufficient. The category "girls," for example, was defined by a set of critical features like: +animate, +human, +young, -male. Each feature was considered necessary, and together the features were sufficient for classifying any object as a member of the category or not.

In more recent years, however, psychologists have come to view certain important categories in more probabilistic terms. Members of the category "birds," for example, share many properties with each other: some birds are alike in being small, others are alike in being colorful, still others are alike in producing sweet songs. We could list all the features that people cite most often when they describe birds, and the composite of the most frequent features would define a kind of theoretical ideal, the prototype. No actual bird would have all these features, and very few features would apply to all birds. However, in practice, some birds have more features than others,

and a bird with a large number of these features (or the more important ones) would generally be a good example of that category, while a bird with fewer (or less important) features would be a poorer example. Thus a sparrow (which has *many* features) is a good or prototypic example, while a penguin (which has fewer features) is a poorer or less prototypic example; an owl (with its intermediate number of features) is an intermediate example (Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976). Concepts from the literature of personality and psychotherapy have also been subjected to this kind of analysis (Cantor & Mischel, 1979; 1979; Cantor, Smith, French, & Mezzich, 1980). In the work described below, we adapted procedures of these studies to examine the concept of the "lonely person."

Forty introductory psychology students at Stanford University were selected on the basis of their scores on the UCLA Loneliness Scale; 13 had obtained high scores (51 to 71), 14 had obtained moderate scores (36 to 41), and 13 had obtained low scores (22 to 28). First, these subjects were asked to think of the best example they could of a person that they knew to be lonely; they were also asked to state the approximate age and sex of the person they were describing. Then they were asked to describe the person—to write down the person's most usual feelings, thoughts, and behavior. The writers were encouraged to be as specific as they wished and to feel free to include descriptive statements, even if the statements could not be easily labeled as a feeling, thought, or behavior. They spent about half an hour describing the person's feelings, thoughts, and behavior.

It is interesting to note that 11 of the 13 lonely subjects described lonely people who were of the same sex and age as themselves, while subjects of the other two groups were about equally divided in this respect (6 of 14 for the moderate subjects and 6 of 13 for the nonlonely subjects); $\chi^2(2) = 5.82, p < .06$. Thus the lonely subjects more often described someone very much like themselves (perhaps themselves), while the other subjects more often described grandmothers, divorced parents, and other acquaintances.

Each subject's description was typed and then submitted to a panel of three judges. Each judge independently tabulated every feature, and the judges met to discuss the features they had identified. The group's consensus was then recorded to obtain separately for each group a final listing and frequency count for subjects in that group.

The three groups of subjects did not differ from each other in the number or nature of identified features. Therefore features from all 40 subjects were combined to derive a more stable summary. Features that had been supplied by 20% or more of the subjects (i.e., eight or more subjects) formed the final prototype. Eighteen features met this criterion. The most common features (and their relative frequencies) were: "avoids social contact and isolates self from others" (.55), "feels depressed" (.45), "thinks [I want a friend]" (.45). There were more feelings than thoughts or kinds of behavior in the prototype, and the most salient feelings were interpersonal ones (e.g., rejected, angry, isolated, inferior).

In order to determine the cognitive organization of the features of the lonely person, we performed a hierarchical clustering procedure (Johnson, 1967). In this procedure, 50 subjects were each given a stack of 18 cards that contained the 18 features, one to a card. The subjects were asked to sort the cards into categories, showing which features seemed to go together. We then computed a matrix showing how often each feature was categorized together with each other feature.

This matrix of proportions was then subjected to a hierarchical clustering procedure (Everitt, 1974; Johnson, 1967). The method identified major clusters within the set of features. The resulting clusters are shown in Figure 12.1. Features that are enclosed in the innermost rectangles were the most tightly clustered. As the rectangles become larger, the denoted cluster is weaker. The figure also shows the criterion for each cluster, that is, the proportion of subjects who placed the features in a common category.

These results showed that the features of the lonely person can be grouped into three major sets. The largest describes thoughts and feelings of being separated from other people, isolated, different, unloved, inferior. A second (smaller) set includes lonely people's actions that bring about this result—avoiding social contacts, isolating themselves from others. A third set concerns paranoid feelings, including feeling angry and depressed. In the clinical literature, a dimension ranging from depression to paranoia has been postulated (Schwartz, 1964), and it is interesting to observe that such a grouping has been captured by our empirical methods.

THE PROTOTYPE AND JUDGMENTS OF LONELINESS

According to our hypothesis, a person who possesses many features of the prototypic lonely person should be a better example of a lonely person than one who possesses fewer features. We expected such people to be seen as lonelier by naive raters. We therefore examined the original essays describing the lonely people in order to identify essays that contained one or two prototypic features, five or six prototypic features, or nine or 10 prototypic features. For each of these subsets, we randomly selected three essays—one written by a lonely person, one written by a not lonely person, and one written by an intermediate person. (The word "lonely" did not appear explicitly in any of the essays.) The resulting nine essays each described a lonely person, but those with one or two prototypic features did so through many idiosyncratic features that had not achieved prototype status.

Sets of three essays were presented to 39 naive subjects, students in a class in introductory psychology at Stanford University. The order of essays was varied systematically across subjects. The subjects were asked to read each essay and make several judgments. First, the subject was asked to rate the person along various dimensions—how likeable the person seemed, how depressed, how angry, how lonely, and how superior and inferior to others

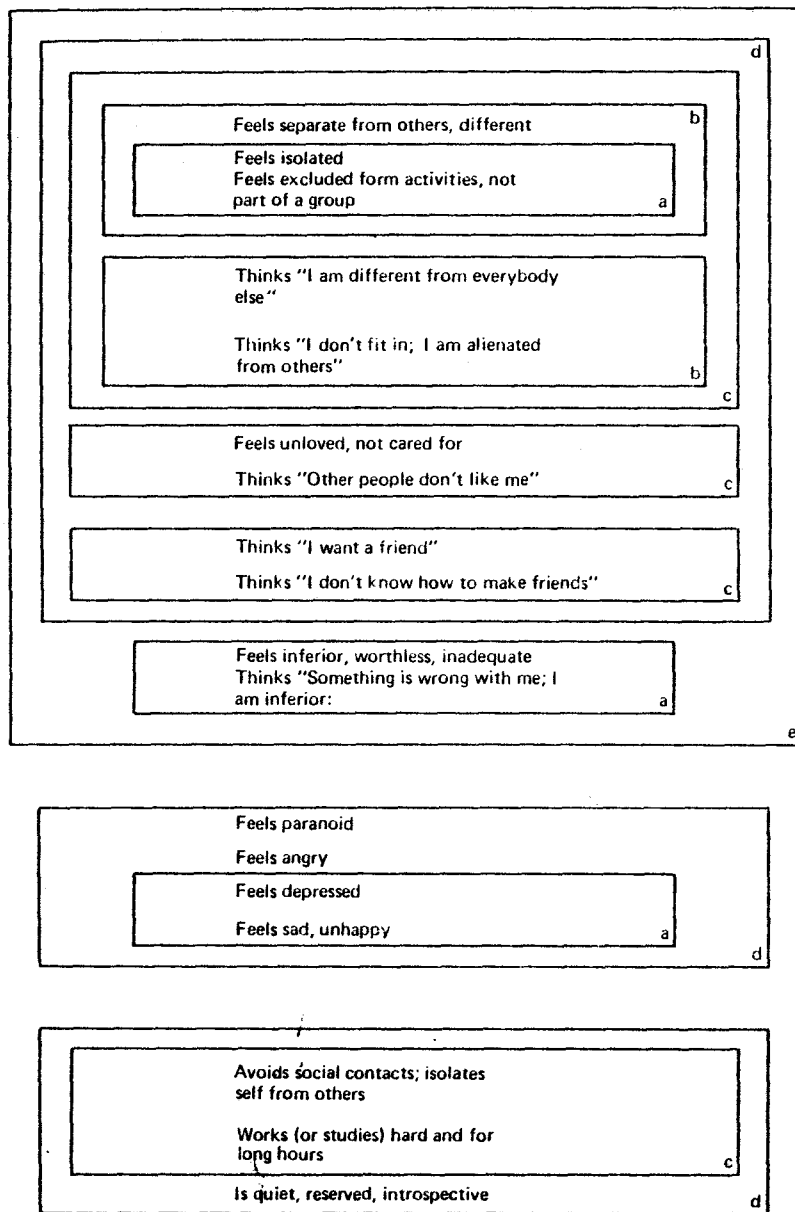


Figure 12.1. Prototype of a lonely person. Strength of cluster: (a) .71-.90; (b) .51-.70; (c) .31-.50; (d) .11-.30; (e) .01-.10.

the person seemed to feel. These ratings were made along a 5-point scale; loneliness, for example, was rated along a scale from 1 ("not lonely") to 5 ("very lonely"). Then the subject examined a list of 24 adjectives, selecting the five adjectives that best characterized the person. The list included the

following adjectives: hostile, happy, introverted, uncomfortable, sensitive, clownish, easygoing, competitive, selfish, disturbed, arrogant, resentful, lonely, aggressive, shy, ineffective, mean, vulnerable, needy, ambitious, self-centered, anxious, depressed, angry.

We were especially interested in the subjects' ratings of the person's loneliness. Our results showed that these ratings varied significantly with the number of prototypic features; $F(2,76) = 5.09, p < .01$. For essays with one or two features, the mean rating was 3.79; for essays with five or six features, the mean was 4.00; for essays with nine or 10 features, the mean was 4.47. This difference was also reflected by another measure, the proportion of times a subject rated the person's loneliness as 4 or higher. These proportions for the three groups of essays were .64, .79, and .95 respectively; $\chi^2(2) = 11.3, p < .005$.

We also examined the subjects' choice of adjectives for describing the person. The most commonly chosen adjective was "lonely," selected .68 of the time. The next most common choices and their relative frequencies were "introverted" (.49) and "depressed" (.46). Adjectives like hostile, happy, clownish, easy-going, aggressive, mean, and angry were rarely or never selected.

Furthermore, the probability of these three most popular descriptions increased as the number of prototypic features increased. "Lonely" was selected for the three sets (1-2, 5-6, and 9-10 features) with the following relative frequencies: .42, .71, and .89; "introverted," .18, .58, and .71; and "depressed," .37, .32, and .68. In all cases the increase was significant; all $\chi^2(2) \geq 11.9, p < .005$.

Thus the more prototypic features the essay contained, the greater the probability that the person was described as lonely. These essays of course, were all intended as descriptions of some lonely person, a good example a lonely person that the writer knew. However, the essays were not all "diagnosed" as lonely by the judges with equal probabilities. The probability of the diagnosis "lonely" was highest only when the description contained nine or ten prototypic features.

RELATION BETWEEN LONELINESS AND DEPRESSION

A similar analysis has been applied to the concept of a depressed person. We asked 40 subjects to describe someone they knew to be depressed, and in the same way, we obtained the most common features of a depressed person. These features were far more numerous than those of a lonely person; approximately 40 features occurred with a probability of .20 or more. These features were also subjected to a hierarchical clustering procedure that yielded the results shown in Figure 12.2. The "depressed person" is a broader, more variegated concept that includes various subsets of features—feeling unenergetic, feeling pessimistic, eating too much, and so on.

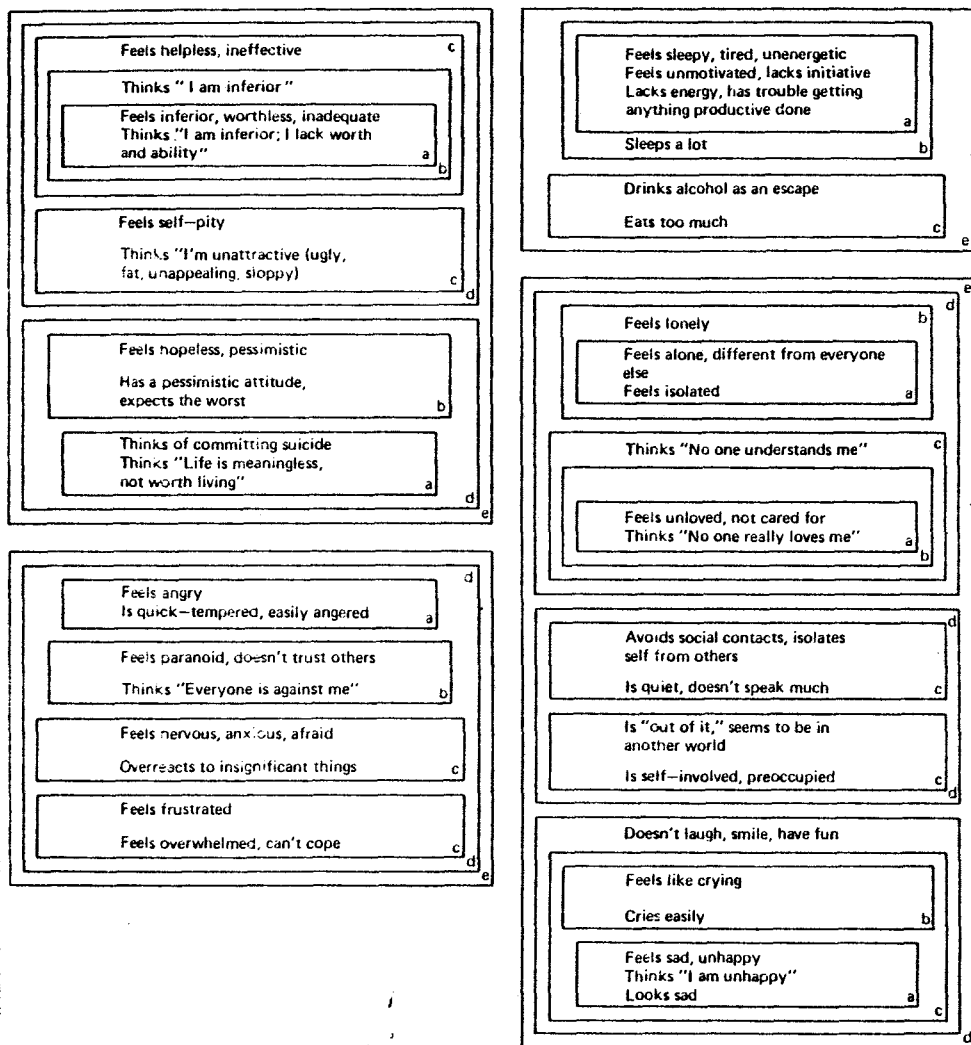


Figure 12.2. Prototype of a depressed person. Strength of cluster: (a) .71-.90; (b) .51-.70; (c) .31-.50; (d) .11-.30; (e) .01-.10.

Furthermore, the 18 features of the lonely person are almost entirely subsumed within those of the depressed prototype. In other words, the lonely prototype is nested within the depressed prototype. To know that a person is lonely is to know that the person possesses some major features of depression. The converse, however, is not true. Knowing that a person is depressed does not necessarily imply that the person possesses features of being lonely. There are other routes to depression besides the lonely route.

To be more precise, let us assume that m features of a prototype lead a

judge to categorize a person into category c with a probability p . Because of the nesting, any individual with m features of the lonely prototype must possess m features of the depressed prototype as well. Thus the probability should be relatively high that a person labeled lonely would also be labeled depressed. However, a person who possesses m features of the *depressed* prototype would not necessarily be labeled lonely, since there are many subsets of depressed features that are not part of the lonely prototype. Therefore, the probability should be relatively lower that a person labeled depressed would also be labeled lonely. Indeed our data showed that the probability was .45 that a lonely person was described as depressed, while the probability was only .29 that a depressed person was described as lonely; this difference, however, needs to be cross-validated on an independent sample of subjects.

LONELINESS AND INTERPERSONAL PROBLEMS

Features of the prototype of a lonely person, like all psychiatric complaints, fall into several conceptually distinct categories. If we examine psychiatric complaints that bring people to psychotherapy, we observe qualitatively different kinds of problems. One class consists of symptoms (typically self-descriptive adjectives), like feeling depressed, lonely, paranoid, or tense. Another consists of self-defeating perceptions, often about the self, such as "Something is wrong with me," "I am a failure," and "I am an ungrateful person." Still another consists of specific behavioral disabilities, typically interpersonal, such as "I can't seem to make friends," or "I find it hard to say 'no' to my friends."

We would like to know how these categories of complaints are related. Does the symptom "loneliness" correspond to any particular set of interpersonal problems? If so, are they included among the prototypic features of a lonely person? The following section shows a way to relate self-descriptive adjectives to interpersonal problems. One previous study has shown that interpersonal problems can be arranged in a three-dimensional semantic space, and another study has shown that self-descriptive adjectives can also be arranged in a three-dimensional semantic space. Furthermore, these two spaces have similar dimensions that correspond in meaning. In addition, particular clusters of interpersonal problems in one space correspond in meaning to particular clusters of adjectives in the other space. Because of these correspondences, it has been possible to relate particular adjectives to particular interpersonal problems. The details are presented below.

In a previous study (Horowitz, 1979) we examined interpersonal problems that began "I can't (do something interpersonal)." Through a multidimensional scaling we found that the problem behaviors varied along three underlying dimensions. One of these dimensions, a dimension of friendliness, ranged from hostile to friendly; another, a control dimension, expressed the degree of control exerted over the other person; a third, a dimension of

involvement, expressed the degree of psychological involvement with the other person. These dimensions corresponded to similar dimensions proposed by earlier investigators (Benjamin, 1974, 1977; Osgood, 1970; Wish, Deutsch & Kaplan, 1976).

The problematic interpersonal behavior was also organized into thematic clusters (intimacy, aggression, independence, socializing, compliance) that occupied different regions of the three-dimensional space. The major clusters of interpersonal problems are listed in Table 12.1 with examples. The prob-

Table 12.1. Examples of Problem Statements in the Form *It's hard for me to . . .*

NOT BE AGGRESSIVE. "I . . .
get annoyed by other people too easily.
talk back to other people too much.
criticize other people too much.
put too much pressure on other people.
BE INTIMATE. "It's hard for me to . . .
commit myself to another person.
trust other people.
tell personal things to other people.
love another person.
BE AGGRESSIVE. "It's hard for me to . . .
tell another person that I have a different opinion.
say "no" to other people.
make demands of other people.
criticize other people.
BE INDEPENDENT. "It's hard for me to . . .
end a relationship when I want to.
"make it" without other people.
do as I please without feeling guilty toward other people.
go out to do my work and leave the other person at home alone.
BE SOCIABLE. "It's hard for me to . . .
have fun at parties.
telephone other people and arrange to get together with them.
join in on groups.
make friends in a simple, natural way.
NOT BE COMPLIANT. "I . . .
let myself be persuaded by other people too easily.
find myself joking and clowning around too much to get
other people to like me.
care too much about other people's reactions.
always act like a helpless, little child in front of others.

lems in a thematic group were also described in terms of their three-dimensional location. For example, problems in being intimate reflected behavioral difficulties in being (a) friendly, (b) subjectively involved with the other person, but (c) uncontrolling. Problems in socializing were similar but reflected less subjective involvement with the other person.

We then wanted to determine how these interpersonal behavior problems

are related to self-descriptive adjectives. If a person reports feeling lonely, can we make any inference as to his or her probable interpersonal problems? To clarify the relationship, we proposed (Horowitz & Post, 1980) that a statement like "I am depressed" or "I am lonely" be regarded as an abstraction that summarizes a set of more specific thoughts, feelings and behavior, like those listed in the corresponding prototype. Some of these thoughts, feelings, and behavior are themselves abstract summaries of still more specific observations about the self, including observations of particular interpersonal problems. Thus an original statement like "I am depressed" is regarded as an abstraction that can be expanded into increasingly specific thoughts, feelings, and behavior.

Therefore, when a person reports being depressed, an interviewer must unravel the meaning of the complaint by asking the person to tell more about being depressed. There is no sure way for the interviewer to help the person become less depressed other than to probe into the meaning (for that person) of being depressed, since one person's depression contains different ingredients from another person's depression. Figure 12.3 illustrates a hypothetical set of responses to the probe. This hypothetical person describes feeling *lonely* and *unloved*. The interviewer then probes further, and the person expands on each of these perceptions. Eventually "I feel lonely" is reduced to difficulties in making friends, participating in groups, relaxing on a date, and the like.

Successive probes eventually lead the person to describe specific interpersonal problems, which are then treated by psychotherapy. The interpersonal problems are thus pivotal—a kind of bottom line—in articulating the superordinate perceptions, since they explain why the person feels depressed, inferior, unloved, and lonely. In our view, many common symptoms and self-observations can be reduced in this way to forms that include significant interpersonal problems.

If self-descriptive adjectives are abstract summaries of interpersonal problems, then we might expect those adjectives to vary along a similar set of three dimensions and fall into clusters comparable to those of the interpersonal behavior. Horowitz and Post (1980) studied the self-descriptive adjectives that occurred in psychiatric interviews of people about to undergo psychotherapy. These adjectives were subjected to a multidimensional scaling procedure and to a hierarchical clustering procedure like that described for interpersonal problems. The results showed that the adjectives did vary in three dimensions that were comparable to those found for problematic interpersonal behavior. Furthermore, the adjective clusters appeared to correspond to the clusters of interpersonal behavior. For example, one major *adjective* cluster included such words as: lonely, introverted, inward, isolated, alone, separate, withdrawn, shy, and timid. This cluster occupied a region of the three-dimensional space comparable to that occupied previously by the problems of socializing (Horowitz, 1979).

To establish the correspondence more directly, we asked lonely people about their major interpersonal problems (Horowitz & French, 1979). We

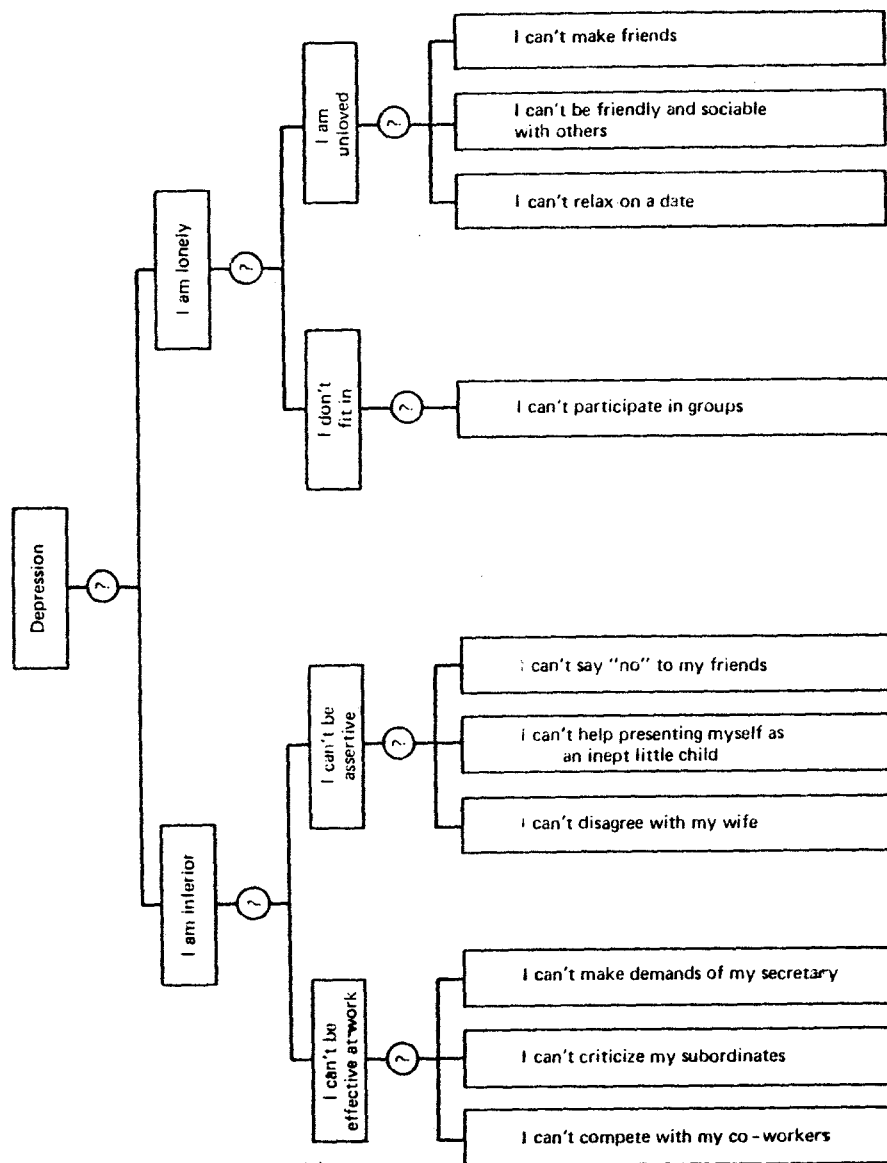


Figure 12.3. Hypothetical set of responses to probes in the form of "Tell me about. . . ."

administered the UCLA Loneliness Scale to undergraduate students at Stanford University and identified individuals who described themselves as lonely. We then administered a deck of 100 cards describing interpersonal problems drawn from Horowitz (1979). Each subject arranged the cards by the Q sort technique into nine categories, from Category 1 ("least familiar as a problem

of mine") to Category 9 ("most familiar as a problem of mine").

We then determined which problems the subjects most often placed among their top problems. The most common type of problem for the lonely subjects were those describing difficulties in socializing. This category contained 13 different problems, which are shown in Table 12.2. We recorded the mean

Table 12.2. Problems of Inhibited Sociability

Problem: I find it hard to . . .	Probability of being among top five problems		Mean category placement	
	Lonely	Not lonely	Lonely	Not lonely
make friends in a simple, natural way.	.28	.00	6.16	2.84
introduce myself to O(s) at parties.	.24	.18	6.36	5.84
make phone calls to O to initiate social activity.	.20	.02	6.12	4.76
participate in groups.	.16	.04	5.12	4.60
get pleasure out of a party.	.16	.02	5.64	4.44
get into the swing of a party.	.12	.07	6.00	4.89
relax on a date and enjoy myself.	.12	.00	5.84	3.56
be friendly and sociable with O.	.08	.00	5.36	3.78
participate in playing games with O.	.04	.02	5.04	4.49
get buddy-buddy with O.	.04	.00	5.64	4.93
entertain O at my home.	.00	.04	4.84	4.56
get along with O.	.00	.02	6.08	5.14
extend myself to accept O's friendship.	.00	.00	4.48	3.31

number of times that each of these problems was placed in Category 9 by lonely and not-lonely subjects. The results in Table 12.2 showed that lonely people suffered significantly more often from problems of this type.

We also recorded the number of the category into which each problem of socializing was placed and averaged the category placements. As shown in Table 12.2, lonely subjects, on the average, placed every problem of socializing into a higher category. Thus lonely people can be characterized by a greater prominence of problems of socializing; however, other groups of problems, such as problems with intimacy, did not discriminate between lonely and not-lonely subjects. It is also worth noting that one problem of socializing does occur frequently enough to appear as a feature of the lonely prototype, namely, "I find it hard to make friends in a simple, natural way." This problem was the single most frequent problem in Table 12.2.

These results suggest that adjectives like "lonely" do have a meaning similar to that of problems of socializing. Other correspondences between adjective clusters and behavior clusters were also found. However, we cannot claim that simple relationships translate adjectives into problem behavior. Suppose a problematic behavior (e.g., telephoning a potential friend) has the coordinates x_B, y_B, z_B in the behavior space, and suppose some corresponding adjective, like lonely, has the coordinates x_A, y_A, z_A in the adjective space. We might expect corresponding coordinates of the two sets to bear a systematic

contrast: If the problematic behavior connotes friendliness, for example, we might expect the self-descriptive adjective to connote unfriendliness.

However, a person who has difficulty acting friendly might behave in a neutral rather than in an unfriendly way. Thus, while people who have difficulty socializing do describe themselves as lonely, the adjective "lonely" connotes nonfriendliness, not unfriendliness. (This is one way in which a lonely person's behavior can be misunderstood.) Furthermore, the dimensions of contrast are not the same for all clusters of adjectives, so two clusters of adjectives in the three-dimensional space would not necessarily maintain the same intercluster distances that had held for the corresponding interpersonal behaviors.

For these reasons, we cannot state a simple relationship between coordinates of the adjectives and corresponding coordinates of the problem behaviors. As a result, two different adjectives can be closer in meaning to each other (in the adjective space) than the corresponding behavioral problems had been (in the behavior space). Indeed two behavioral clusters might be quite far apart in the behavioral space—for example, socializing and behaving independently—but the corresponding clusters of adjectives might be much closer together and seem rather similar. For example, a word like "lonely" and a word like "passive" seem to have quite different behavioral origins; problems of socializing for the one, problems of being assertive and independent for the other. Yet as adjectives, they seem fairly similar. These two adjective clusters were in fact quite close together, and their proximity might cause a lonely person to be viewed (incorrectly) as passive; in that case, problems of socializing might be confused with problems of being assertive and independent. Thus it is particularly important to determine the precise meaning of self-descriptive adjectives in terms of particular interpersonal problems, or else we may misunderstand the person's problems.

THE MEANING OF "I CAN'T" IN INTERPERSONAL PROBLEMS

To know that a lonely person "finds it hard to make friends" is useful for clarifying the meaning of "lonely," but another ambiguity arises over the wording of the interpersonal problem.

Expressions like "I find it hard to" and "I can't" are characteristic ways of introducing an interpersonal problem, but they are actually ambiguous. Sometimes they denote a lack of competence, meaning "I don't know how to" (e.g., "I can't swim"). At other times they denote an inhibition against executing the desired behavior: The speaker has the necessary skill, but a self-restraint checks the behavior, and "I can't" has the meaning "I can't bring myself to." At still other times "I can't" reflects the interfering effects of situational anxiety, masking the competence that would otherwise manifest itself.

We therefore need to understand the intended meaning of the problem statement if we are to formulate a proper treatment strategy. If the lonely

person's problems imply a lack of competence over socializing, then an appropriate treatment should provide the person with relative skills. If the problems reflect an inhibition, then the treatment should clarify the conflict, reduce whatever conditions had caused the inhibition (e.g., guilt), and help the person choose freely among response options. And if the problems reflect the interfering effects of anxiety, then the treatment should desensitize the person to anxiety.

The top-rated problem "I find it hard to make friends in a simple, natural way" was the only problem that was frequent enough to achieve prototype status; it occurred in the prototypic thought "I don't know how to make friends." This prototypic thought implies that the lonely person's problem reflects a lack of know-how, a lack of competence. If this interpretation is correct, then two consequences should follow. First, when lonely people explain their failures in social situations, their account of what went wrong should reflect their lack of know-how. In the language of attributional theories, their attributional style should draw particularly upon *ability* attributions to explain failures in interpersonal situations (see, for example, Peplau, Russell, & Heim, 1979). Second, the observation that they lack ability in interpersonal situations should be valid. When their competence is assessed, even for benign social situations, their performance should be poorer. In the following sections we examine and test these hypotheses.

The Attributional Style of Lonely People

First, we composed 22 descriptions of situations that could end either in success or failure, situations in which college students might find themselves. Some of these situations described interpersonal activities (e.g., attending a party for new students) and others described noninterpersonal activities (e.g., working a crossword puzzle). To validate the interpersonal versus noninterpersonal distinction, we asked 20 judges to read each situation and rate it on a 9-point scale, ranging from 1 ("not at all interpersonal") to 9 ("very interpersonal"). The mean rating of the interpersonal situations ranged from 4.20 to 8.05, while the mean rating of the noninterpersonal situations ranged from 1.70 to 4.15.

Ten situations (five interpersonal and five noninterpersonal) were selected to form a questionnaire. Each situation was written in two forms. One described an outcome of success, the other described an outcome of failure, making 20 situations altogether—five of interpersonal success, five of interpersonal failure, five of noninterpersonal success, and five of noninterpersonal failure.

Six alternative reasons (or attributions) for the outcome were offered for each situation. These reasons, which were the most frequent responses that the subjects produced during a pretest, can be classified as follows: (1) the *effort* attribution explained the outcome in terms of how hard the person had tried; (2) the *ability* attribution explained the outcome in terms of the person's

competence (or lack of competence); (3) the personality *trait* attribution explained the outcome in terms of some pervasive characteristic of the person other than ability; (4) the *strategy* attribution explained the outcome in terms of the person's particular approach, tactic, or method; (5) the *mood* attribution explained the outcome in terms of a transitory mood state; and (6) the *other circumstances* attribution explained the outcome in terms of any remaining external circumstances beyond the person's control.

Here is an example of an interpersonal failure item.

You have just attended a party for new students and failed to make any new friends.

1. I did not try very hard to meet new people.
2. I am not good at meeting people at parties.
3. I do not have the personality traits necessary for meeting new people.
4. I used the wrong strategy to meet people.
5. I was not in the right mood for meeting new people.
6. Other circumstances (people, situations, etc.) produced this outcome.

The subjects were asked to imagine themselves in each situation and to consider each possible reason that might explain why the situation had turned out as it did. They were asked to rate each reason to show how much, in their experience, it would have contributed toward the outcome if it had happened to them. A 7-point rating scale accompanied each alternative: "1" meant that that reason contributed little to the outcome, "7" meant that it contributed much. In addition, the subjects were asked to circle the one reason that best explained the outcome.

The questionnaire was administered to 298 students in an introductory psychology class at Stanford University. These students also completed the UCLA Loneliness Scale and the Beck Depression Inventory.

The subjects were categorized into five groups on the basis of their loneliness scores, with approximately 60 subjects in each group. One-way analyses of variance were performed on the importance ratings for each attributional factor. Table 12.3 shows the results of a priori contrasts, comparing the two extreme groups. (The lonely group had loneliness scores of 50 and above; the nonlonely group had scores of 30 and below.)

Table 12.3 shows that lonely and nonlonely subjects differed primarily in their use of ability and trait attributions. Lonely people attributed interpersonal failures to a lack of ability and to personal traits more than nonlonely people did. The opposite was true for interpersonal successes, where lonely people did not attribute success to these factors as often as nonlonely people. On noninterpersonal situations, however, the two groups did not differ very much.

Previous researchers have suggested that depressed and lonely people do not as readily attribute failures to factors like strategy and effort, that is, to unstable, controllable factors (see, for example, Anderson & Jennings, 1980; Seligman, Abramson & Semmel, 1979; Weiner, 1979). Although some

Table 12.3. Importance Ratings of the Causes of Interpersonal and Noninterpersonal Success and Failure

Reason or Cause	Interpersonal failure		Interpersonal success		Noninterpersonal failure		Noninterpersonal success	
	Lonely <i>n</i> = 65	Non- lonely <i>n</i> = 56	Lonely <i>n</i> = 65	Non- lonely <i>n</i> = 56	Lonely <i>n</i> = 65	Non- lonely <i>n</i> = 56	Lonely <i>n</i> = 65	Non- lonely <i>n</i> = 56
Ability	4.25	2.82	6.54**	3.80	4.98	4.24	5.04	5.36
Trait	3.64	2.45	5.59**	3.60	4.61	2.37	3.54	3.38
Strategy	4.51	4.67	.26	4.41	4.79	4.80	4.83	5.30
Effort	4.15	4.59	2.07*	5.00	5.09	4.42	5.72	5.94
Mood	4.38	4.59	1.03	5.02	5.26	4.22	4.98	5.16
Other	3.71	4.20	1.99*	4.34	4.08	3.62	3.33	3.36
			<i>t</i>		<i>t</i>		<i>t</i>	<i>t</i>
			6.03**	4.35	6.03**	4.24	5.04	1.63
			5.09**	2.68	5.09**	2.37	3.54	.68
			1.84	4.35	1.84	4.80	4.83	2.13*
			.44	4.13	.44	4.22	5.72	1.42
			1.21	4.27	1.21	4.42	4.98	.91
			1.11	3.32	1.11	3.62	3.33	.15

Pooled variance estimates from all 5 groups were used in all *t* tests, *df* = 293.

**p* < .05, two-tailed

***p* < .001, two-tailed.

differences in Table 12.3 supported that hypothesis, those differences were much weaker than the differences for ability and trait attributions.*

Table 12.4 presents the results of the forced choice attributions, showing the proportion of times that each reason was selected as the single best reason for explaining the outcome. Again the differences were significant only for the interpersonal situations shown in Table 12.4. As with the importance ratings, lonely people attributed their interpersonal failures to a lack of ability more than nonlonely people did. Furthermore, they did not attribute their interpersonal successes to ability as often. A similar pattern occurred for the use of personal traits, though the difference for interpersonal successes did not reach statistical significance.

The forced choice data also showed which attributions were avoided by lonely people. Among the four remaining reasons, lonely people did not attribute failures to the strategy choice as often as nonlonely people did. Furthermore, when asked to explain their successes, lonely people seemed to be at a loss and chose "other circumstances" more often as their explanation.

Table 12.4. Forced Choice Attributions of the Causes of Interpersonal Success and Failure: Proportion of Times Each Reason Was Selected as the Main Cause^a

Reason or Cause	Interpersonal failure			Interpersonal success		
	Lonely n = 65	Non lonely n = 56	t	Lonely n = 65	Non lonely n = 56	t
Ability	.27	.05	6.57**	.09	.20	3.11*
Trait	.10	.01	4.21**	.04	.07	1.22
Strategy	.14	.26	2.84*	.12	.16	1.09
Effort	.17	.24	1.17	.26	.26	.09
Mood	.21	.28	1.76	.26	.25	1.30
Other	.12	.17	1.23	.22	.06	4.81**

^a Pooled variance estimates from all 5 groups were used in all *t* tests, *df* = 293.

**p* < .05, two-tailed

***p* < .001, two-tailed

* Since the subjects had also completed the Beck Depression Inventory, we analyzed the data using depression scores in place of the loneliness scores. The value of *r* between the two sets of scores was .58 (*p* < .001), so the results for depression were practically identical to those for loneliness. Depressed subjects, like lonely subjects, differed from nondepressed (and nonlonely) subjects in ascribing interpersonal failures to their lack of ability and personal traits; they did not differ, however, in their attributions for non-interpersonal failures. Since the experimental literature on depression and learned helplessness has often relied on noninterpersonal experimental tasks (e.g., anagram solving), it seems unlikely that a depressed person's attributional style *per se* would produce the observed performance decrement.

These results show that interpersonal situations play a salient role in the lonely person's dilemma. Put simply, lonely people believe that they are interpersonally less competent. This attributional style clarifies their feeling of inferiority: they attribute interpersonal failures to social ineptness and do not believe, as nonlonely people do, that interpersonal failures reflect temporary conditions that can be remedied by trying harder or by trying other strategies. Moreover, people who regard themselves as interpersonally incompetent would come to feel that there is no use in trying. The person would thus give up more easily or, if possible, avoid interpersonal situations. Such self-imposed isolation would provide fewer opportunities to develop social skills, leading to more failure, more negative self-assessments, and more social withdrawal.

Assessing Competence

These results suggested that lonely people do regard themselves as less competent in social situations; they are more apt than nonlonely people to attribute interpersonal failures to their lack of ability. But the question still remains as to whether their attributions are valid. Are they in fact interpersonally "less able"? We wanted to compare lonely and nonlonely people on a simple test of interpersonal competence. However, many interpersonal tasks might arouse anxiety in lonely people, and a performance decrement could arise, not from lack of competence, but from the interfering effects of anxiety. Therefore, we searched for a test of competence that was relatively impersonal and nonthreatening, a task that the subject could approach in a relatively leisurely and nondefensive way, one that would test the limits of the subject's competence rather than assess the net performance observed under anxiety and interpersonal stress.

The task we selected was adapted from one developed by Platt and Spivak (1975). This task required the subject to consider hypothetical situations that posed different kinds of problems and to generate possible solutions. The subject was free to think about each situation and, in a leisurely way, to write a possible solution. The task was scored for the number and quality of methods, or "means," that the subject generated. Each situation was described in impersonal terms about some fictitious character, in order to further divert the subjects' attention from themselves and possibly reduce stress. The task was therefore benign in that the subjects (a) were under no time pressure, (b) focused their attention on a fictitious character, and (c) were not required to enact the behavior itself.

The subjects were presented with a set of 11 situations. Each situation described the problem and a successful outcome in which some fictitious person successfully fulfilled his or her needs. The subjects were asked to supply the means by which the successful end was achieved, telling how the person managed to solve the problem. Here is one example:

C. had just moved in that day and didn't know anyone. C. wanted to have friends in the neighborhood. The story ends with C. having many good friends and feeling at home in the neighborhood. You begin the story with C. in his (her) room immediately after arriving in the neighborhood.

Most of the situations were interpersonal and involved different themes, particularly ones concerned with socializing—making friends in a new neighborhood, getting to know a new roommate, meeting new people at a party, meeting someone of the opposite sex, participating in a neighborhood meeting. One situation, however, was different from the others in that it was not interpersonal; it concerned a person who lost and later recovered a watch. A separate group of judges read the situations and rated them along various dimensions—how interpersonal they seemed, what skills they called for—and the judges' ratings corroborated our judgment that this situation was different from the others. Lonely people were expected to perform more poorly on the interpersonal situations that called for skills at socializing, but not on this control item.

The UCLA Loneliness Scale was administered to a large class in introductory psychology at the beginning of the term. Subjects were selected from this pool to have high, medium, or low scores of loneliness, corresponding to the top, middle, and bottom fifth of the distribution. There were 39 subjects in all—15 nonlonely subjects (7 males, 8 females) who had scores below 30; 10 medium subjects (7 males, 3 females) who had scores between 40 and 45; and 14 lonely subjects (9 males, 5 females) who had scores above 55. The subjects were contacted by telephone several weeks after they completed the Loneliness Scale, and they were tested in groups of four. Each situation was presented at the top of a separate page, and the subjects wrote their responses on that page. Situations for male subjects were written about a male person, those for female subjects, about a female person. The entire procedure took about half an hour.

Three naive judges rated each response independently and blindly. To check that the three groups of subjects were comparable in verbal productivity, the judges first counted the total number of words in each response. The three groups of subjects did not differ; $F(2, 36) < 1$. The judges also examined other characteristics of the subjects' verbal style, such as the frequency with which positive and negative affect were expressed and the frequency with which personal names were used. The three groups of subjects did not differ significantly in any of these respects.

Then the judges counted the number of methods (or "means") that the subjects generated as a way of solving the problem. The scoring procedures of Platt and Spivack (1975) were adapted in order to identify and score the number of methods that the subjects generated. Corresponding scores of the three judges were then averaged to yield a single, stable index of each subject's performance.

First we examined the subjects' performance on the control item (methods of recovering a lost watch). The three groups did not differ significantly on

this task in any way. For the total number of methods produced, $F(2, 36) = .07$, $p > .93$. This F was smaller than the corresponding F for any other item.

Having established the comparability of the groups on the control item, we then examined the number of methods produced. In each of these situations, the lonely subject produced fewer methods for solving the problem. The three groups differed significantly; $F(2, 36) = 4.28$, $p < .02$. The mean number of methods per item were 2.17, 2.95, and 2.74, respectively, for lonely, medium, and nonlonely subjects.

In addition, the judges rated the overall quality of each response as a way of solving the problem. These global ratings ranged from 1 ("poor") to 5 ("excellent"), and the three groups differed significantly in this respect as well; $F(2, 36) = 4.85$, $p < .01$. The mean ratings for the three groups were: 1.73, 2.24, and 2.07. Thus lonely subjects produced fewer methods of solving the problems, and their responses in general were judged to be of poorer overall quality. Subjects of the lonely group also used more fantasy in their responses, $F(2, 36) = 3.52$, $p < .05$, and they more often failed to generate any method at all, $F(2, 36) = 3.32$, $p < .05$.

To summarize, these results show that lonely people are less able to think of ways of solving the problems posed by interpersonal situations. Even though they were comparable to the other subjects in their performance on the control (impersonal) situation, they were less able to generate ways of solving the interpersonal problems. In this sense, lonely people do appear to be interpersonally less competent, thus validating their own self-description and attributional style.

COMMENT

This chapter has described our progress in studying the prototype of a lonely person. At times our work has focused on specific prototypic features as a way of clarifying the lonely person's struggle. The prototypic thought "I don't know how to make friends," for example, has led us to study the lonely person's attributional style and to test for possible behavioral deficits.

However, the prototype of a lonely person is more than a list of individual features. It is an *organized* list, and we have tried to portray this organization through a clustering procedure. Because of the organization, the concept of "a lonely person" is analogous to a gestalt: When a description of the person cites enough prototypic features, the prototype is activated; and once activated, the prototype suggests other features that were not included in the original description. Thus a person who is labeled "a lonely person" then seems to be characterized by other prototypic features such as "introspective" and "introverted."

The *similarity* between two concepts can also be expressed in terms of prototypic features. To determine whether "a lonely person" is conceptually

similar, for example, to "a passive person," we would need to compare the two prototypes and determine their number of overlapping features. If they have few features in common (as we have hypothesized), then the concepts would be different.

Perhaps the most important aspect of a prototype is the variability that it implies among the features that characterize different people's concepts. Our prototype of a lonely person contained 18 features, but there was no one feature that occurred in all (or even most) essays describing lonely people. Indeed the probability of the single most common feature was only .55. Furthermore, the majority of prototypic features appeared in less than half the essays. For these reasons we cannot make specific predictions about individual cases; we can only make probabilistic statements about lonely people in general. The prototype does provide us with educated hunches and leads towards describing those individuals who call themselves lonely, but each person's unique meaning still needs to be determined through systematic questioning.

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