DOCUMENT RESUME

ED 084 597 CS 500 485

AUTHOR Bochner, Arthur P.; Kaminski, Edmund P.
TITLE Toward Conceptualizing the Domain of Interpersonal Behavior: A Factor-Analytic Study.
PUB DATE Nov 73
NOTE 35p.; Paper presented at the Annual Meeting of the Speech Communication Association (59th, New York City, November 8-11, 1973)

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Attitudes; Communication (Thought Transfer); *Concept Formation; *Group Behavior; Human Relations; Interaction; Interpersonal Competence; *Interpersonal Relationship; *Personality Assessment; Rapport; *Research; Role Perception
IDENTIFIERS *Interpersonal Behavior Inventory

ABSTRACT

Conceptualizing the subject matter of interpersonal behavior was the primary objective of this study. Researchers administered version three of Lorr and McNair's Interpersonal Behavior Inventory (IBI) to 507 undergraduates at Cleveland State University. The first group received three copies of the IBI and were asked to rate themselves, rate a person liked, and rate a person disliked. The second group completed only the "self" rating, and the third group filled in only the "best liked others" section. The "self" and "best liked others" responses were analyzed. Results suggest that while the IBI instrument can be used effectively in interpersonal communication and assessment, it ought to be revised to emphasize the domain of interpersonal behavior. (DS)

Toward Conceptualizing the Domain of Interpersonal Behavior: A Factor-Analytic Study

Arthur P. Bochner, Cleveland State University

Edmund P. Kaminski, Cleveland State University

Presented at the Speech Communication Association Convention

New York, New York

November 1973

Toward Conceptualizing the Domain of Interpersonal Behavior: A Factor-Analytic Study

One of the primary goals of research is to build theory. Theories require concepts which lay out what is being studied in a clear and substantive manner.[1] In the research process, unambiguous conceptualization usually precedes the design and analysis of experiments. One way to conceptualize an object of study is to uncover its basic structure; indeed, a major goal of science is to find the structure of nature. In the field of psychology, for example, Charles Spearman (1927) and L. L. Thurstone's (1935) research on the structure of mental abilities led directly to advances in the assessment and understanding of these abilities.

The research reported in this paper is concerned with the structure of interpersonal behavior.[2] In the field of communication the term "interpersonal behavior" is being used with increasing frequency to describe a major area of inquiry; sometimes it is used with such generality as to render it meaningless. It is important to decide what behaviors should occupy our attention and what lines of inquiry will offer us the greatest payoff for understanding interpersonal transactions. Uncovering the structure of interpersonal behavior should provide some tentative answers to questions such as these.

Previous Research: Two independent questions will be considered. Does a circumplexical arrangement[3] best fit the nature of interpersonal behavior? What common factors account for the correlations between different interpersonal behaviors? The first question is concerned with content and order, while the second question is concerned with underlying structure.

Leary and his associates at the Kaiser foundation (Laforge and Suczek, 1955; Leary, 1957) were the first to suggest that interpersonal behavior

could be represented by a circular continuum. Arranged at the perimeter of the circle were sixteen generic variables which represented "the optimal degree of refinement of interpersonal themes." Data reported by Leary (1957), however, did not directly substantiate either the independence or the order of the categories.

Schaeffer (1959) re-analyzed published correlation tables from a variety of parent-child and maternal behavior studies and demonstrated that variables which describe molar social and emotional interactions show a clear circumplex ordering. Schaeffer's study was among the first to employ Guttman's (1954) circumplex model for describing ordered interrelationships between variables. Following Schaeffer's lead, Becker and Krug (1964) proposed a circumplex model of child and adolescent interpersonal behavior. Reanalysis of six previously reported studies provided substantial support for their model. Baumrind and Black (1967) treated boys and girls separately, and also found evidence for a circumplex model of child behavior.

Lorr and McNair (1963, 1965, 1966) conducted a series of studies designed to test for a circumplex ordering of the interpersonal behaviors of adult psychiatric outpatients and "normals." Utilizing therapists and psychology students to rate the behavior of several large samples of patients and normals, Lorr and McNair produced an interpersonal behavior circle which contained fourteen interpersonal categories. They also reviewed data reported by Stern (1958), Cambell (1959), and Laforge and Suczek (1955) and found a circular order fit each.

Studies of group interaction have not directly supported the circumplexical hypothesis, but several have implied that such a relationship existed. For example, Borgatta, Cottrell, and Mann (1958) pointed out that the order of their variables would have become circular if they

had judicially chosen traits with negative connotations. Longabaugh (1966) also reported that he might have ordered his variables in a circle had appropriate space been allocated.

To summarize, circumplex orderings have appeared with striking regularity in interpersonal behavior studies. Although the orderings frequently contained gaps, there have been no published reports which failed to support the circular ordering when the variables were social, emotional, and interpersonal.

Many of the studies reviewed above have also attempted to uncover the structure which accounts for the circumplexical arrangement of correlation coefficients. Foa (1961) claims that a circumplex can always be described by two dimensions, though two-factor structures do not necessarily produce circumplexes.

The two-factor theory originated with Leary (1957) who hypothesized that power (dominance-submission) and affiliation (love-hate) could account for most of the variance. Schaeffer (1959) found two major dimensions of maternal behavior in three different sets of data. Labeled love-hostility, and autonomy-control, his findings provided direct support for the two-factor conception. However, higher-order factor structures in other samples have not produced unequivocal support for the two-factor notion.

Schultz (1958) proposed that three interpersonal "needs" account for variations in interpersonal behavior: Inclusion, Control (power) and Affection (affiliation). Carter (1954) factor-analyzed behavior ratings in five small group studies and found an additional factor which he called Overall Social Activity. Longabaugh (1966) analyzed his data two different ways and found that when a measure of overall social activity was included, it appeared as an additional common factor, but when it was omitted the

data confirmed Leary's conception. As a result of these findings, the third factor has often been explained as "a methodological artifact", (Foa, 1961, Longabaugh, 1966) yet it has appeared with surprising frequency. In a second-order factor analysis of the original IBI rating instrument, Lorr and McNair (1963) produced a factor which was bi-polar and seemed more closely related to Social Participation (inclusion) than to their label, Affection. In a later study with a revised IBI form, Lorr and Suziedelis (1969) found a Sociability vs. Detachment factor which clearly resembled Schultz' hypothesized Need for Inclusion. Neither of Lorr's (et. al.) studies included a unique measure of social activity.

Several studies have produced more than three factors. However, these additional factors have appeared inconsistently and have usually been part of complex factor structures (e.g. Becker and Krug, 1964), or accounted for small proportions of variance (Lorr and Suziedelis, 1969). It is likely that such factors are descriptive of restrictive rather than universal conditions.

The purpose of the present study was to test the circumplexical order hypothesis and determine the second-order factor structure at the phenomenological level of conscious communication. Two points were of critical importance in designing the research: (1) Leary's (1957) interpersonal theory of personality included a careful description of five levels of personality. Two of these levels, public communication (level 1) and conscious description (level 2) produce data relevant to interpersonal behavior. Despite the importance of the phenomenological level (level 2) researchers have given a disproportional amount of attention to the public communication level where a persons behavior is rated by

others.[4] All of the factorial studies reviewed above utilized ratings of directly observed communication from trained raters or peers. Leary was careful to point out that understanding personality and interpersonal behavior required "multi-level" analysis. It was hypothesized that interpersonal data originating at the level of conscious description of self would still produce a circumplexical and a two or three factor structure. Since a great deal of communication theory is concerned with self-other relationships we chose to obtain data about both and compare them. (2) An additional product of Lorr and McNair's research was the development of an instrument for the classification of interpersonal behavior. A secondary objective of this research was to assess the complexity of the IBI. We hoped to be able to reduce the number of items, producing an effecient diagnostic and research instrument which could be used in the assessment of interpersonal behavior among "normal" human beings.[5]

METHOD

Procedures: The sample consisted of 507 undergraduate students who were enrolled in undergraduate classes at Cleveland State University. The Interpersonal Behavior Inventory (version 3) was administered to three separate groups. The first group (n=287) received three copies of the IBI with directions which required them to do the following: (1) rate yourself ("self"); (2) rate a person who you know very well and like "more than anyone else in the world" (best-liked other); and (3) rate a person who you know well or have known well and dislike "more than anyone else in the world" (least-liked other). Each item is rated according to how often it is manifested (not at all, occasionally, usually, very often). The second group (n=160) completed only the "self" ratings and

the final group (n=160) completed only the "best-liked other" ratings. This report will be restricted to the analysis of the "self" and "best-liked other" responses. Analysis of the "least-liked other" ratings has not yet been completed.

Rating Instrument: The rating instrument was Lorr and McNair's Interpersonal Behavior Inventory (IBI). It consists of 140 statements about manifest (observable) interpersonal behaviors and has been used most frequently to produce 15 category scores which can be arranged in a circumplexical order (Lorr and McNair 1965, p. 828). The categories have been validated through a series of factor analyses utilizing Guttman's (1952) multiple-group procedure. Lorr and McNair created an a priori hypothesis matrix which contained sixteen linearly independent groupings of items. In other words, they predicted that each item would correlate highest with the category (factor) to which it had been assigned, rather than any of the others, and that sixteen groupings were sufficient to reduce the residual coefficients to zero. Their predictions were correct for 84% of the items, but two categories were eliminated because they deviated from circumplexity. All of the items for the remaining categories were kept.

In the present study, we wished to contribute greater simplicity and parsimony to the IBI category interpretations. The multiple group technique is a useful method for testing the assignment of variables to categories, but it tends to reduce variables to a complexity of one and to equalize variance contribution among factors (Rummel, 1966, p. 337-338). Thus, items which make insubstantial contributions to total variance may be erroneously retained.[6]

Statistical Procedures: There was no reason to believe that the factor structures for self and other ratings would be invariant. Thus, responses

to the two stimuli were analyzed separately. The first-order factor analyses were based on the correlations among the 140 item scores on the IBI. The analysis for the "self" ratings included all Ss who had completed such ratings (n=447), regardless of when, or in which groups, they were tested. The same was true for the "best-liked other" analysis.

The 140 variables for the 447 respondents were intercorrelated and the Pearson correlation matrix for each stimuli was then submitted to a principal axis orthogonal factor analysis. A significant problem encountered at this point was how many factors should be rotated. An initial analysis was made to determine how many factors were associated with latent roots above unity. Fifteen "self" factors and fourteen "best-liked" other factors had values above 1.0. In Lorr and McNair's reports the rank of the matrices ranged from 14-16. Since the figures were compatible, it was decided to rotate the factors with latent roots greater than 1.0. Kaiser's varimax procedure was used with squared multiple correlations as the estimate of communality.

Factors having at least three items with loadings of $\pm$.3 or greater were interpreted. Three of the factors were bi-polar and were subsequently treated as separate categories. Category scores were generated for all Ss who had completed IBI forms for both stimuli (n=287). Category scores consisted of the sum of the unit-weighted items with loadings above $\pm$.3 for that category (factor).

The next step was to test for circumplexity by applying Guttman's (1954) circular order model. According to Guttman a circumplexical order is one which has no beginning or end; it is circular. The central concept is ordinal sequence, rather than dimensionality as in traditional factor analysis. Assessment of circumplexity is carried out on sets of correlation coefficients. A closed circumplex exists when the highest

positive correlations are found along the main diagonal and when preceding down any column or across any row the correlations at first decrease and then increase as a function of the sequential separation of variables. Of course, when using personality variables some of the correlations will be negative.

Guttman did not advocate any strict rules for the existence of circumplexity. In discussing the appraisal of order, he even included simple inspection of the matrix: "I submit that hierarchy, if it really exists, may often reveal itself to inspection alone...if inspection reveals a hierarchy, then the hierarchy exists" (Guttman, 1954).

In this study, a series of steps were carried out to assess circumplexity. First, the correlation tables were arranged in a sequence suggested by the previous work of Lorr et. al., and Leary. Then, the diagonal elements, beginning with the main diagonal and moving toward the lower left hand corner, were summed and compared. Next, the correlations of each category with each other category were plotted as ordinates against the rank order on the abscissa (Lorr and McNair, 1962, 1965). A procedure recommended by Schaeffer was also used as an "inspection criterion". Two variables which had high correlations with other variables but near zero correlations with each other were selected and the correlations of all other variables with these two orthogonal variables were plotted. Finally, a linkage analysis (McQuitty, 1957) was made to determine whether variables were ordered in a contiguous sequence.

The final step was to assess the nature of the higher-order factors. The intercorrelations of the standardized category scores (n=287) were factored by the principal axis procedure with an orthogonal varimax rotation of factors with latent roots above 1.0. Squared multiple correlations were used as the estimates of communality.

Results

Ten factors emerged from the analysis of the self data.[7] Nine of the factors were unipolar and one was bi-polar. The ten factors accounted for only 34 percent of the variance, but all of them seemed clearly definable. Seventy-four of the 140 items had loadings which were interpretable in terms of one of the ten factors; 23 of these items loaded only on the self factors, i.e. they did not have loadings above .30 on any of the "best-liked other" factors. The order of the factors, as arranged by variance-contribution, was as follows: Control, Nurturance, Dependency, Detachment-Affiliation, Deference, Mistrust, Submissiveness, Recognition, Abasement, and Sociability. Two high loading statements for each factor are presented in Table 1.

INSERT TABLE 1 ABOUT HERE

Eight factors resulted from the first-order analysis of the best-liked other data. Six of these factors were unipolar and one was bi-polar. The eight factors accounted for 35 percent of the variance. One factor did not have sufficiently high or unique loadings to be interpretable and was deleted from further analysis. Eighty of the items were definable in terms of one of the seven remaining factors; 26 of these items loaded only on the best-liked other factors. The order of the factors, as arranged by variance contribution, was as follows: Control, Sociability, Inferiority, Nurturance, Affiliation-Detachment, Mistrust, Exhibition-Inhibition. Two high loading statements for each factor category are presented in Table 2.

INSERT TABLE 2 ABOUT HERE

Although no formal tests for comparing the factor structures were made, an inspection of the factor matrices suggested that five factors were similar if not invariant, across the two analyses.[8] These five factors were Control, Nurturance, Detachment-Affiliation, Mistrust, and Sociability. In both cases, these factors accounted for more than two-thirds of the common variance associated with the factor structures.

- -

INSERT TABLE 3 ABOUT HERE

- -

The category scores for "self" and "best-liked other" were computed and arranged in the hypothesized ordinal sequences. Table 3 shows the correlations among the category scores and the lower diagonal sums for the "self" ratings. Recognition did not fit the circular ordering and was excluded. The diagonal sums indicated a clearly circular ordinal pattern. There was only one small deviation from contiguity; Submissiveness correlated higher with Dependence (.353) than with its immediate neighbor Abasement (.284). All contiguous variables correlated positively and increases and decreases in the magnitude of correlation were for the most part monotonical. Unlike Lorr and McNair's sample of "normals" (1965), Deference correlated negatively with Control, as it should. When the correlations were plotted against the expected circular sequence a relatively smooth curve resembling an open parabola was fit to each plot. When the correlations of all of the variables were plotted against Detachment and Control, the two orthogonal variables, a quasi-circumplexical structure appeared.

- -

INSERT TABLE 4 ABOUT HERE

- -

The correlations among the category scores and the lower diagonal sums for the "best-liked other" data are reported in Table 4. The diagonal sums again suggested a circular order in the magnitude and directions of the correlation coefficients. There was one deviation from contiguity; Mistrust had a slightly higher correlation with Detachment (.325) than with Inferiority (.313). There was also a gap between Nurturance and Inhibition; they were placed next to each other, but correlated negatively (-.017). When the category correlations were plotted against the expected circular sequence, relatively smooth curves resembling open parabolas again resulted. None of the paired relationships were orthogonal.

- -

INSERT TABLE 5 ABOUT HERE

- -

A linkage (typal) analysis of the correlation tables for the two stimuli are reported in Tables 5 and 6. For the "self" condition four groupings occurred. The reciprocal pairs were: Mistrust-Detachment, Sociability-Affiliation, Dependence-Abasement, and Submissiveness-Deference. In each case, the typal clusters were comprised of the variables which were contiguous in the a priori arrangement of the categories. There were no apparent deviations from the ordinal arrangement.

- -

INSERT TABLE 6 ABOUT HERE

- -

The analysis of the "best-liked other" data produced four reciprocal pairs. These were: Control-Exhibition, Inhibition-Detachment, and Sociability-Nurturance. Again, each cluster was comprised of contiguous

variables and no deviations from the hypothesized ordinal arrangement were found.

- -

INSERT TABLE 6 ABOUT HERE

- -

The analysis of the "best-liked other" data produced four reciprocal pairs. These were: Control-Exhibition, Inhibition-Detachment, and Sociability-Nurturance. Again, each cluster was comprised of contiguous variables and no deviations from the hypothesized ordinal arrangement were found.

- -

INSERT TABLE 7 ABOUT HERE

- -

The higher order factor analysis for the "self" category scores is shown in Table 7. The first factor is bi-polar; it consists principally of Sociability and Affiliation vs. Detachment and Mistrust. It is very similar to Longabaugh's Interpersonal Seeking, Schultz' Need for Inclusion and Bale's Overall Social Activity. We have called it Social Activity.

The second factor is defined primarily by Submissiveness, Abasiveness, and Dependence with Nurturance and Deference contributing to a lesser degree. Lorr and McNair's Intropunitiveness (1962) and Dependency (1969) and Stern's (1958) Submissive-Restrained seem closely related. It also resembles the lower order of Leary's bi-polar first factor, the absence of power. The relatively high loading on Nurturance ruled out Dependence as the central theme. We have named it Submissive-Affection.

The third factor is unipolar and consists mainly of Control. Affiliation and Recognition contribute to a minor degree. It resembles Schutz' Need for Control. Lorr and his co-workers (1962, 1969) have found a control factor in each previous study. In fact, a control or

dominance factor has appeared in virtually every previous factor analysis of interpersonal behavior. Ours was no exception.

- -

INSERT TABLE 8 ABOUT HERE

- -

Results for the higher-order analysis of the "best-liked other" category scores are reported in Table 8. Both the major factors are bi-polar.

The first factor is defined by Mistrust, Detachment, and to a lesser degree Inferiority at one pole and Nurturance and Sociability on the other end. The relatively high loadings for Mistrust and Nurturance suggest that this factor has more to do with Affection than with Social Activity. As a result of the relatively small number of positively weighted Affective categories, this conclusion must remain highly tentative. The evidence does suggest that it is most similar to Leary's Hostility-Love factor. We have identified it as Hostility-Affection.

The second factor is also bi-polar and consists of Control, Exhibition, and Affiliation on one end and Inhibition and Detachment on the other. Control and the absence of Control seem to be the central themes. As a bi-polar factor it is almost identical to Leary's notion of Dominance-Submission.

DISCUSSION

Results of the first-order factor analyses provide tentative guidelines for revision and adaptation of the IBI instrument. Thirty-seven of the items failed to load substantially on any of the common factors and probably should be discarded. Of the remaining 103 items, 23 were unique to self-perceptions and 26 were unique to rating highly regarded others.

Replications will ultimately determine the usefulness of these items. For the present, it would seem advisable to use the self-perception items only when self-concept is a criterion and the -other items only when rating the behavior of others is a criterion. The 54 items which produced substantial loadings in both analyses appear to be useful in terms of both criteria. Using only the original Lorr and McNair items, the revised instrument would consist of 74 self-perception items and 80 perception of other items. In both cases, the revised inventory appears to be a substantially more economical instrument.

A very important question concerns the comparability of the two first-order factor structures. It was assumed that self-perceptions and perceptions of best-liked others were conceptually distinct and were likely to produce different patterns of responses. While a number of items were relevant to only one of the stimuli, a substantial number of factors showed remarkable similarity across both stimuli. The dimensions Control, Nurturance, Detachment-Affiliation, Mistrust and Sociability appeared in both factor structures. In addition, the Dependency factor in the "self" analysis closely resembled the Inferiority factor in the "-other" analysis. Nine of the 14 Dependency items appeared among the 19 Inferiority items.

Of the five comparable dimensions, the similarity in the Control factor is, by far, the most striking. In both domains, it appeared as the first factor and accounted for the largest proportion of variance. Initially, this finding seemed to indicate that impressions of power and influence dominate one's interpersonal perceptions regardless of the object of those perceptions. However, a thorough inspection of these items suggested a rival interpretation. The majority of the Control items contained verbs with distinctively negative connotations such as: belittles, exploits, ridicules, uses sarcasm, bosses, neglects, monopolizes, and

seizes. These words reflect behaviors that are socially unacceptable or undesirable, regardless of their potential power. The dimension encompassing these variables was called Control because the variables function as means of controlling the responses of others. It occurred to us, however, that the raters' perceptions may have been more substantially influenced by the desirability or undesirability of the behaviors than by their function. To say that behaviors indicative of power or influence regulated the variance would then be misleading, since such behaviors are not ordinarily considered undesirable.

To assess this hypothesis, the category score means for the Control scales were tabulated. The overall means for "self" and "best-liked other" were almost identical ("self = 1.93, "best-liked other" = 1.91), both occurring less than "occasionally." The mean for the Control items on the "least-liked other" ratings were also tabulated[9] and compared to the other domains. The mean was 3.04 which slightly exceeded "usually" and was more than one full unit greater than the Control scores for "self" and "best-liked other." Undoubtedly the differences were statistically significant.

Furthermore, the Tables which illustrated the intercorrelations of the category scores (Tables 3 and 4) showed that Control had its highest negative correlations with Nurturance and Affiliation rather than with Submissiveness or Inhibition. Thus, Control more closely approximated the opposite of helpfulness than of powerlessness.

Arguing from the standpoint of social exchange theory, Longabaugh (1966) has contended that the weight of elements in ordering variance is indicative of their value for the participants in the situation. In both domains, Control carried the greatest weight. What is it, then, that people value about the variables which comprise the Control dimension? In

interpersonal perception, it would appear to be their absence. The more frequently these behaviors are observed among a person's interpersonal repertoire, the more likely it is that the person will be evaluated negatively; the less frequently these behaviors are observed, the more likely the person will be evaluated positively.

Conclusions such as these are not intuitively obvious, especially when we consider the amount of space this factor occupied in the interpersonal perception of our subjects, nearly one-third of the common variance. It might be hypothesized that one evaluates the significant others in his life (whether liked or disliked) in terms of the probability that these undesirable behaviors will occur. It is also likely that individuals attempt to camouflage their use of these interpersonal behaviors to insure that others will like them. Evidence for both of these assertions can be found in the research on Machiavellianvism (Christie and Geis, 1970; Bochner and Bochner, 1972). High Machs are more influential than low Machs, have an acutely accurate perception of their surroundings and are highly successful at camouflaging their exploitive tactics; in short, they have mastered control communication.

Of special interest is the small amount of total variance accounted for by the first-order factors. Almost two-thirds of the variation could not be explained by these factors. This is certainly not a desirable occurrence; it is also one that is difficult to understand. One possible explanation might be that factoring was terminated too soon, leaving considerable non-analyzed common variance. However, the results suggest that this is unlikely. Of the factors which were rotated, dimensions beyond the tenth factor were uninterpretable and were explaining very small amounts of variance. A more plausible interpretation would be that most of the unique or unexplained variance was specific to the remaining items

in the instrument and uncorrelated with the common factors. More than one-fourth of the items had insubstantial loadings on all of the major common factors, suggesting that they were uncorrelated with these factors.

The beginning of a solution to this problem can be found in the circumplex analysis. Examination of the intercorrelations among the "best-liked other" categories showed a large gap between Nurturance and Inhibition. Obviously, there is a good deal of interpersonal behavior which falls between giving active support and withdrawing from attention. In Lorr and McNair's hypothesized sequence, Deference, Submission and Abasement appear between Nurturance and Inhibition. In the present study, these categories occurred in the analysis of "self" ratings, but were absent from the "best-liked other" results. Even in the "self" analysis, however, the categories did not reflect the expression of liking, warmth, and friendliness which is usually associated with Affection and is thought to be independent of giving help. Behaviors which are more passively helpful than Nurturance such as kindness and cooperativeness, and are referred to as Agreeableness by Lorr and McNair, are also missing. Categories which incorporate behaviors in the active or passive affective quadrant are essential to interpersonal effectiveness and probably explain a considerable proportion of the unexplained variance in this study. It is difficult to understand why these categories did not emerge. Perhaps, as Carson (1969, p. 106) has suggested, the items are biased in the direction of behaviors characteristic of psychotherapy patients. This is a distinct possibility, because the items were written by therapists or psychiatrists and the vast majority of subjects were patients. Since an orthogonal rotation was employed, it is also possible that the Nurturance and Sociability factors were broader and subsumed many of the affective items.

The IBI shows much promise for use in interpersonal communication

research, as well as in interpersonal assessment, a grossly neglected area in our field. Its applicability is dependent upon whether it can be economically expanded to include the Affective categories absent in the present study. In our current work, we are generating additional items from research findings on interpersonal competence. Bochner and Kelly (1972) have argued that facilitative and action skills form the nucleus of effective interpersonal functioning. Carkhuff's (1969a; 1969b) landmark research on the training of counselors has provided empirical evidence that interpersonal skills such as empathy, concreteness, respect, and confrontation discriminate the effective from the ineffective helpers. Furthermore, Farber's (1962) factor analysis of marital relations showed that empathy, aunonomy, and resourcefulness are major dimensions of interpersonal competence in marriage.

At present, the IBI is more closely associated with personality assessment and the dysfunctional modes of interpersonal relations than with the full spectrum of interpersonal functioning. The use of items which reflect interpersonal competence, such as those listed above, should enlarge the scope of IBI to include diagnosis of a fuller repertoire of interpersonal behavior. It could also provide some clues about the relationship between personality variables and interpersonal skills.

The higher-order factor analysis results suggest that three broad modes characterize self perceptions about interpersonal exchanges, but when the referent is "best-liked other" two bi-polar modes are characteristic. These results are highly consistent with previous findings and confirm the two-or-three-dimensional interpersonal structures. Lorr and Suziedelis' (1966) five factor structure, unique among the dimensional studies, was not supported.

In the three-factor structure, the first dimension is a clear representation of Social Activity. On the active side, the items reflect such

behaviors as attending, mixing widely, inviting, encouraging, going out of one's way, and dropping in on others; on the inactive or passive side, the items reflect such behaviors as avoiding, staying away, acting reluctant, and keeping to one's self. The Hostility-Affection factor on the "best-liked other ratings" resembles the activity index, but the substantially higher loadings on Nurturance and Mistrust suggested a different interpretation for this factor. It is quite possible that the differences in the structures were caused by such artifacts as the different number of input categories and/or the latent root cutoff criterion for rotation. Since the two structures were based on data from only one large sample, interpreting the variations between the two structures as meaningfully different must await replication.

Both the first and second-order analyses indicate that influence is not the only function of interpersonal behavior; in this study, it did not even account for the majority of common variance. Indeed, the results suggest that individuals are more than "occasionally" nurturant and affiliative and that their affective behavior is independent of control or dominance. The literature reviewed earlier also supports the pervasiveness of affective behavior. In fact, Leary (1957) originally conceived of influence and affection as orthogonal to one another. Researchers in the field of communication, however, continue to give most of their attention to the persuasion, influence, and power functions of communication.[10]

It seems entirely improbable that scholars in the field of Communication will come to understand the nature of interpersonal transactions until we take a more balanced approach to communication research and include the full spectrum of affective communication within the confines of our inquiry. This means that we must place as much emphasis on feelings and emotions as we do on organization and argumentation. At the same time, we must be as interested in the kinds of communication that enhance

self-esteem and affection between people as we are in the kinds of communication that cause individuals to vote for a candidate or to contribute to a charity.

Summary

This research had as its objective conceptualizing the subject matter of interpersonal behavior. A provisional taxonomy of interpersonal behavior, ordered as a circumplex, was empirically derived from both the phenomenological and public communication ratings of subjects. At both levels, ratings were most prominently influenced by a Control dimension, made up of the perceptions of socially undesirable behaviors. The circular arrangements of the variables showed that a gap existed in the active and passive affective quadrants which may explain the small amounts of variance accounted for by the common factors. It was suggested that revision of the IBI incorporate the affective dimensions associated with the findings of interpersonal competence research. It was also recommended that communication researchers give appropriate emphasis to the affective domain of interpersonal behavior, because restricting research to questions of influence limits the range of appropriate answers and precludes a fuller understanding of interpersonal transactions.

TABLE 1

Factor Categories, Representative Statements, and Factor Loadings for IBI "Self" Ratings

Factor Category	Statement	Loading
Control	Dominates conversations; interrupts; talks down others.	.67
	Makes startling remarks that attract attention.	.65
Nurturance	Manifests a genuine interest in the problems of others.	.66
	Reassures and comforts others when they are feeling low.	.63
Dependency	Expresses inferiority in relation to others.	.59
	Gives in rather than fight for his rights in a conflict.	.58
Detachment	Engages in solitary recreation and amusement.	.50
	Stays away from social affairs where he will have to meet new people.	.49
Affiliation	Tries to be included in most of his friends activities.	-.48
	Mixes widely at a social gathering.	-.48
Deference	Carries out orders of his superiors with zest.	.60
	Shows respect for persons in authority by a hitude and manner.	.53
Mistrust	Shows reluctance to trust or confide in others.	.68
	Mistrusts the intentions of others toward him.	.57
Submissiveness	Shows no irritation or anger even when justified.	.47
	Shows emotional reserve and restraint in relating to others.	.34
Recognition	Seeks membership in clubs and associations which have high prestige.	.48
	Directs the activities of one or more clubs or associations to which he belongs.	.46

TABLE 1 (cont'd)

Factor Category	Statement	Loading
Mistrust	Shows reluctance to trust or confide in others.	.68
	Mistrusts the intentions of others toward him.	.57
Submissiveness	Shows no irritation or anger even when justified.	.47
	Shows emotional reserve and restraint in relating to others.	.34
Recognition	Seeks membership in clubs and associations which have high prestige.	.48
	Directs the activities of one or more clubs or associations to which he belongs.	.46
Abasement	Apologizes for not having done better when he completes a task.	.42
	Makes unnecessary apologies for his appearance or conduct.	.35
Sociability	Encourages friends to drop in informally at his home.	.53
	Invites friends and acquaintances to his home.	.56

TABLE 2

Factor Categories, Representative Statements, and Factor Loadings For IBI "Best-Liked Other" Ratings

Factor Category	Statement	Loading
Control	Uses, exploits, or manipulates others for his own ends.	.64
	Strives for symbols of status and superiority to others.	.74
Sociability	Invites friends and acquaintances to his home.	.66
	Encourages friends to drop in informally at his home.	.51
Inferiority	Expresses inferiority in relation to others.	.59
	Tries to get others to make his decisions for him.	.61
Nurturance	Manifests a genuine interest in the problems of others.	.74
	Reassures and comforts others when they are feeling low.	.75
Affiliation	Seeks membership in clubs and associations which have high prestige.	.48
	Attends or helps organize parties, dances, celebrations and reunions.	.46
Detachment	Keeps shyly in the background in a social gathering.	-.35
	Lets his friends or spouse push him around.	-.47
Mistrust	Shows reluctance to trust or confide in others.	.62
	Mistrusts or questions indications of affection from others.	.52
Exhibition	Draws attention to himself in a group by telling jokes, anecdotes.	.51
	Acts the clown or amuses others at a party.	.56
Inhibition	Avoids actions in public that might make him conspicuous.	.42
	Keeps silent when in a group.	.31

TABLE 3

Table of Intercorrelations and Diagonal Sums for IBI "Self" Ratings

	Con	Mis	Det	Dep	Abase	Sub	Def	Nur	Soc
Control									
Mistrust	.274								
Detachment	-.081	.516							
Dependence	.093	.362	.432						
Abasement	.101	.189	.181	.439					
Submissiveness	-.170	.099	.257	.353	.284				
Deference	-.100	-.143	.022	.097	.192	.364			
Nurturance	-.143	-.276	-.064	.055	.251	.294	.313		
Sociability	.177	-.334	-.432	-.236	-.049	-.119	.131	.372	
Affiliation	.292	-.246	-.540	.061	.118	-.024	.125	.313	.462
Diagonal Sums	.292	-.069	-1.017	-.747	-.495	.204	.393	1.745	3.456

TABLE 4

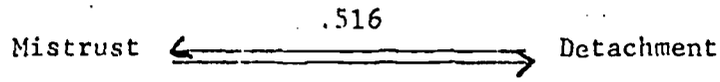
Table of Intercorrelation and Diagonal Sums for IBI "Best-Liked Other Ratings"

	Con	Mis	Infer	Det	Inh	Nurt	Soc	Aff
Control								
Mistrust	.445							
Inferiority	.085	.313						
Detachment	-.072	.325	.388					
Inhibition	-.192	.193	.308	.494				
Nurturance	-.259	-.546	-.001	-.246	-.017			
Sociability	-.008	-.358	-.128	-.259	-.174	.496		
Affiliation	.276	-.122	-.149	-.502	-.302	.331	.388	
Exhibition	.520	.129	-.044	-.270	-.367	-.045	.189	.312
Diagonal Sums	.520	.405	-.174	-1.036	-1.735	-.486	.818	2.819

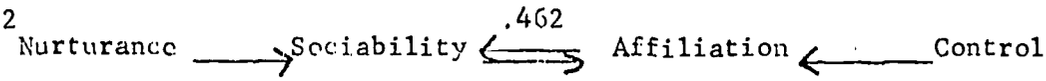
TABLE 5

Linkage of Analysis for "Self" Category Correlations

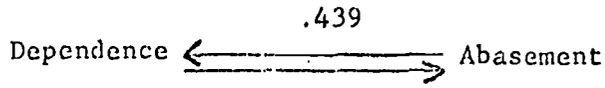
Type 1



Type 2



Type 3



Type 4

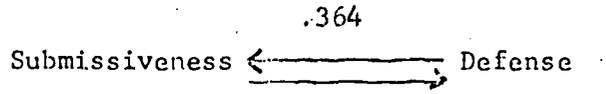
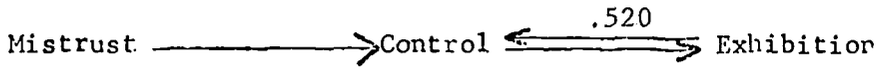


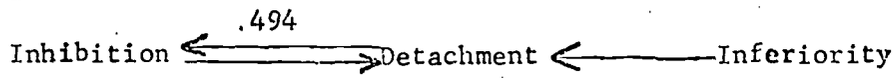
TABLE 6

Linkage Analysis for"Best-Liked Other"Category Correlations

Type 1



Type 2



Type 3

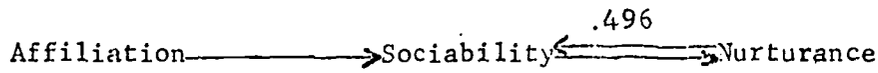


TABLE 7

Second-Order Factor Analysis of IBI "Self" Category Scores

VARIABLE	FACTORS		
	I	II	III
	Social Activity	Submissive-Affection	Control
Variance Accounted For	21.29	14.39	10.37
Control	.096	-.063	.691*
Mistrust	.688*	.130	.341
Detachment	.742*	.304	-.162
Dependence	.360	.581*	.167
Abasement	.092	.563*	.166
Submissiveness	.110	.598*	-.161
Deference	-.213	.431*	-.096
Nurturance	-.492	.510*	-.184
Sociability	-.635*	.018	.194
Affiliation	-.635*	.204	.479*
Recognition	-.136	-.014	.382*

* Indicates categories with substantial factor loadings.

TABLE 8

Second-Order Factor Analysis of IBI "Best-Liked Other Ratings"

VARIABLE	FACTORS	
	I	II
	Hostility-Affection	Dominance-Submission
Variance Accounted For	26.68	18.13
Control	.340	.718*
Mistrust	.787*	.249
Inferiority	.400*	.138
Detachment	.595*	-.439*
Inhibition	.347	-.477*
Nurturance	-.642	-.107
Sociability	-.543*	.172
Affiliation	-.429	.503*
Exhibition	-.023	.680*

* Indicates categories with substantial factor loadings.

NOTES

1. Actually, the relationship between concepts and theories is an interdependent one. As Kaplan (1964) has noted: "...concept formation and theory formation in science go hand in hand...The better our concepts, the better the theory we can formulate with them, and in turn, the better the concepts available for the next, improved theory" (53-54).

2. The topic of dimensionality or underlying structure has been grossly neglected in the field of speech communication. The words structure or domain of interpersonal behavior do not appear in the topic index of any interpersonal communication textbooks published since 1968. Giffin and Patton (1971) are the only writers to give prominence to "systematic approaches" to interpersonal orientations.

3. A circumplex is a system of variables which can be ordered in a circle; the order has no beginning nor end and all variables have an equal rank.

4. Beginning with Watsonian behaviorism, the behavioral scientists have insisted on obtaining "objective data". The level of consciousness has been discarded because it is subjective and introspective. Leary, however, was careful to draw a sharp distinction between consciousness and conscious communication and to show the necessity for including conscious description in personality assessment:

> Two principles must be applied to any scientific approach to the conscious aspects of personality. The first is the classic solution developed (but not utilized) by the earliest behaviorists; treat the subjects introspection not as the essence of truth, but as a behavioral expression to be evaluated in the light of all other measurements. The second principle is an

> explicit corollary that can only develop from a systematic multilevel analysis of behavior. It holds that the data of conscious report have of themselves an ambiguous meaning until they are systematically evaluated in the light of the data from the other levels of behavior.
>
> At Level II we deal, therefore, with conscious reports and not cousciousness. We define it operationally in terms of all the statements an individual makes about himself or his world. We employ it and evaluate it in relation to other levels of personality (1955, 133).

5. Assessment is one of the most neglected areas of research in interpersonal communication. Baudhuin (1972) recently reviewed the literature in this area and found that "with the hundreds of reported and perhaps, thousands of unpublished studies in the field of interpersonal communication it is amazing how few attempts have been made to measure the processes involved in interpersonal communicative behavior (p.91).

6. In the multiple groups sense, there is no selection error because the items chosen do correlate high with one and only one factor. Some items, however, may be so redundant or so weak as to be meaningless. These should not be retained.

7. Correlation matrices and factor loading tables are available in full detail and may be obtained from the senior author; they have been omitted in the interest of brevity.

8. A statistical comparison is, of course, preferable to the subjective approach taken here. Unfortunately, we were not equipped with the programs to complete a comparative cluster communality analysis (Tyron and Bailey, 1970) which would have given us an objective index of similarity or separation of the two structures. In this study, factors were only given identical names when at least 50% of their items were identical.

9. At this point, we did not have the factor analysis of "least-liked other" scores completed. Therefore, we used the means from each of the items which had sufficient loadings on both the "self" and "best-liked other" Control dimensions. The overall mean was the sum of the item means divided by the total number of means (n=20).

10. Wackman (1973) arguing for more research on communication accuracy, has made a similar point about persuasion research. His data suggested that the major function of interpersonal communication may be information exchange, instead of persuasion. Most persuasion research, according to Wackman, is not interpersonal communication research, though it has been interpreted as relevant to interpersonal communication. He concludes that accuracy should receive more attention because too much emphasis has been placed on the persuasion function of communication.

BIBLIOGRAPHY

Baudhuin, E. Scott. (1972) "A Critical Analysis of: 'An Interpersonal Communication Inventory'; Millard J. Biewenu, Sr., Journal of Communication, 21 (1971), 381-388. Abstracted in Abstracts of the 58th Annual Meeting of the Speech Communication Association, 1972, p.91.

Baumrind, D., and Black, A.E. (1967) "Socialization Practices Associated With Dimensions of Competence in Preschool Boys and Girls." Child Development, 38, 2, 291-327.

Becker, W.C. and Krug, R.S. (1964) "A Circumplex Model for Social Behavior in Children," Child Development, 35, 371-396.

Bochner, Arthur P. and Bochner, Brenda. (1972) "A Multivariate Investigation of Machiavellianism and Task Structure In Four-Man Groups." Speech Monographs, 39, 4, 277-285.

Bochner, Arthur and Kelly, Clifford. (1972) "Interpersonal Competence: A Paradigm for Planned Change in Undergraduate Communication Instruction." Presented at the Speech Communication Convention, Chicago, Illinois.

Borgatta, E.F., Cottrell, L.S., Jr. and Mann, J.M. (1958) "The Spectrum of Individual Interaction Characteristics: An Interdimensional Analysis." Psychological Reports, 4, 279-319.

Cambell, M.M. (1959) "The Preliminary Dimensions of Item Ratings on Scales Designed to Measure 24 of Murray's Manifest Needs." Unpublished Doctoral Dissentation, University of Washington.

Carkhuff, Robert, R. (1969a) Helping and Human Relations: A Primer for Lay and Professional Helpers: Volume 1, Selection and Training New York: Holt, Rinehart and Winston, Inc.

Carkhuff, Robert, R. (1969b) Helping and Human Relations: A Primer for Lay and Professional Helpers: Volume 2, Practice and Research New York: Holt, Rinehart and Winston, Inc.

Carter, Launor, F. (1954) "Evaluating the Performance of Individuals as Members of Small Groups." Personnel Psychology, 7, 477-484.

Christie, R. and Geis, F. (1970) Studies in Machiavellianism. New York: Academic Press.

Farber, Bernard. (1962) "Elements of Competence in Interpersonal Relations: A Factor Analysis." Sociometry, 25, 1, 30-47.

Foa, U.G. (1961) "Convergences in the Analysis of the Structure of Interpersonal Behavior." Psychological Review, 68, 341-353.

Giffin, Kim; and Patton, Bobby, R. (1971) Fundamentals of Interpersonal Communication, New York: Harper and Row.

Guttman, L. (1952) "Multiple Group Methods for Common Factor Analysis: Their Basis, Computation and Interpretation." Psychometrika, 17, 209-222.

Guttman, L. (1954) "A New Approach to Factor Analysis." In P.F. Lazarfeld (ed.), Mathematical Thinking in the Social Sciences. Glencoe, Ill.: Free Press, 258-348.

Kaplan, Abraham. (1964) The Conduct of Inquiry. San Francisco: Chandler Publishing Company.

LaForge, R., and Suzeek. (1955) "The Interpersonal Dimension of Personality: III. An Interpersonal Checklist." Journal of Personality, 24, 94-112.

Leary, T. (1957) Interpersonal Diagnosis of Personality. New York: The Ronald Press.

Lougabaugh, R. (1966) "The Structure of Interpersonal Behavior." Sociometry, 29, 441-460.

Lorr, M., and McNair, D.M. (1963) "An Interpersonal Behavior Circle." Journal of Abnormal and Social Psychology, 67, 68-75.

Lorr, M., and McNair, D.M. (1965) "Expansion of the Interpersonal Behavior Circle." Journal of Personality and Social Psychology, 2, 823-830.

Lorr, M., and McNair, D.M. (1966) "Methods Relating to Evaluation of Therapeutic Outcome." In L.A. Gottschalk and A.H. Auerbach (Eds.) Methods of Research in Psychotherapy. New York: Appleton-Century-Crofts, 573-594.

Lorr, Maurice, and Suziedelis, Antanas. (1969) "Modes of Interpersonal Behavior." British Journal of Social and Clinical Psychology, 8, 124-132.

McQuitty, L.L. (1957) "Elementary Linkage Analysis for Isolating Orthogonal and Oblique Types and Typal Relevancies." Educational and Psychological Measurement, 17, 2, 207-229.

Rummel, R.J. (1970) Applied Factor Analysis, Evanston: Northwestern University Press.

Schaefer, E.S. (1959) "A Circumplex Model for Maternal Behavior." Journal of Abnormal and Social Psychology, 59, 226-235.

Schutz, W.C. (1958) Firo: A Three-Dimensional Theory of Interpersonal Behavior. New York: Rinehart.

Spearman, C. (1927) The Abilities of Man. New York: Macmillan.

Stern, G.G. (1958) Preliminary Manual: Activities Index and College Characteristics Index. Syracuse: Syracuse University Psychological Research Center.

Thurstone, L.L. (1935) The Vectors of Mind. Chicago: University of Chicago Press.

Tyron, R.C., and Bailey, D.E. (1970) Cluster Analysis. New York: McGraw-Hill, 1970.

Wackman, Daniel, B. (1973) "Interpersonal Communication and Coorientation." American Behavioral Scientist, 16, 4, 537-550.