# SPECIFICATION OF NONVERBAL BEHAVIORS FOR CLINICAL ASSESSMENT

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*ABSTRACT:* Nine categories of nonverbal behavior (extremity movements, self-manipulations, facial expression, posture, orienting, gestures, voice quality/tone, speech rate/pressure, and sense of timing) were tested in a standardized role play situation of social skills. Each category was judged using a new "midi-level" system of assessment which permitted specification of component behaviors but allowed observers to make single ratings at the ends of videotaped episodes. The midi-level measurements were as reliable and practical as more traditional global measures of social skill and social anxiety. Midis were superior to globals (i.e., single overall ratings of skill and anxiety) in terms of predicting physiological indices of social anxiety. Voice quality/tone and sense of timing appeared to be the best predictors of criterion social skill measures and self-manipulations, extremity movements, and gestures had the highest weights in predicting criterion measures of social anxiety.

There are at least two reasons why practicing clincians might include the measurement of nonverbal behaviors in their assessment of patients. First, nonverbals can be salient indicators of clinical change, perhaps more so than a patient's verbalizations (Argyle, 1975). Second, there is an unprecedented call for data collection in therapy situations, particularly for empirical evidence of clinical change (Barlow, 1981). Despite those reasons and the growth of general awareness of nonverbal behavior in psychology (Boice, 1982b), there is little systematic use of this potential information by clinical practitioners.

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The reluctance of clinicians to employ nonverbal measures may owe to an uncertainty as how to proceed. Traditionally, where clinicians have measured these behaviors at all, they have relied on intuition and experience in deciding what to measure (Trower, 1980). This approach has yielded contradictory results and the impression of an inexact approach to behavior study. Nor have clinicians generally looked for useful methodology from psychologists who specialize in research on the assessment of nonverbal behavior. The trend there is toward forbiddingly complex measurements. Consider the work of Ekman (1979), justifiably considered to be the 'state of the art'; his anatomically based system for describing facial action might seem prohibitive for a therapist who must concentrate on more than distinguishing between scores of eyebrow movements and other facial expressions. Even the intriguing work of applied researchers such as McGuire and Polsky (1980) may not directly help the practitioner. No doubt their assessment of gestural, postural, and spacing mechanisms that signal clinical improvement in psychiatric inpatients provides useful information for therapists. But McGuire and Polsky's system requires the attention of observers who are not simultaneously engaging the patients in therapy.

The closest approximation to a solution originates in research on social skills (Curran & Monti, 1982). Therein lie examples of the difficulties and promise of arriving at measures of nonverbal behaviors that are objective, clinically valid, and clinically practical. One significant move toward validity came when social skills researchers shifted their emphasis from assessments based on self-reports of subjects/patients to those based on the observations of actual skills (Friedman, 1979). Since then, observational assessments have tended toward extremes of reductionism or wholism. On one side of the dichotomy, measurements have been 'global' where they typically consist of one numerical rating for social skills over an episode or session. The popularity of global measures reflects their reliability and ease of use (Monti, Corriveau, & Curran, 1982; Monti, Fink, Norman, Curran, Hayes, & Caldwell, 1979). The limitation of 'globals' is apparent in their label; they are too ambiguous to help specify which patient behaviors contribute to a rating as unskilled and, consequently, which behaviors should be targeted for change.

Where, on the other hand, social skills researchers have attempted to be specific, they have been too molecular. Even though 'micro'-level measurments of nonverbal behaviors such as

gaze seem obviously important (Conger & Conger, 1982), the results of using them have been generally disappointing. Micros have typically failed to correlate meaningfully across situations or methodologies (Twentyman & McFall, 1975) and their social validity has been suspect (Kazdin, 1977). Micro measurements of gazing have, for example, been made so reductionistic that one aspect, frequency of eye contact, did not differentiate high and low anxious patients while another, duration of eye contact, did (Waxer, 1977). Despite progress in defining micros in terms of more meaningful criteria (Conger & Farrell, 1981) their essential drawback for use by clinical practitioners remains. Micro judgments are still based on frequency counts and/or durations of behaviors.

One benefit of the way in which social skills researchers have approached clinical measurments is that their dichotomy suggests a compromise. It may be possible to combine some of the best qualities of both approaches in 'midi'-level measurements of nonverbal behavior. Midis would permit the specification of response patterns such as facial expression, without requiring the measurement of all their intracacies. And midis would be based on a single rating of appropriateness or anxiety per episode. Midi-level measurments would, then, permit a therapist to attend to a reasonable number of nonverbal patterns and to rate them on an 11-point scale at the end of a session. There are, of course, potential drawbacks to ratings systems, most notably bias and subjectivity (Boice, 1982c). But bias and subjectivity may be tempered via the use of carefully designed concepts. And, ratings have many advantages pertinent to a clinical setting (Wallander, Conger & Conger, 1982): ratings are better than frequency counts for characterizing the complexity of behaviors in a limited set of categories, ratings take advantage of the ability of observers to abstract and integrate relevant information, and ratings require less training than other direct observational methods.

Development of a battery of midi-level measurements for use in assessment of social skills is important, as already indicated, for purposes of clinical application. Clinicians who face growing demands for accountability in their practices might welcome a practical assessment tool that measures significant behavioral events. Midi-level measurements would also be valuable in providing a more general example of how a battery of nonverbal measures can be developed for specific uses. It could be advantageous to move beyond the detailed examination of just one kind of nonverbal behavior in a clinical setting (Boice & Kraemer, 1981)

to the establishment of groups of measurements that provide more meaningful overall pictures of patient adjustment. By doing so we may be able to specify the actual skills deficits that contribute to diagnoses of pathology and to social discomfort (Boice, 1982a). Establishment of an assessment battery of nonverbal behaviors would require the kind of synthesis too rarely attempted in this area. It would necessitate building a list of assessment items based on our knowledge about gestural, postural, and vocal behaviors in conditions of social anxiety (Harper, Weins, & Matarazzo, 1978). And, as a matter of course, that battery would have to be tested for validity, preferably in a standardized series of social interactions (Monti, Curran, Corriveau, DeLancey, & Hagerman, 1980).

Demonstration of clinical utility would also depend on methodological considerations such as the practicality and reliability of midi-level measurements. Moreover, midi judgments must, if they are to be taken seriously, be shown to exhibit levels of generalizability and validity equal to those of the global judgments already in popular use. Midis should also correlate meaningfully with established measurements of social skills, especially an independent measure of social anxiety such as physiological arousal (Borkovec, Stone, O'Brien, & Kaloupek, 1974; Wilson, in press). Recent advances in psychophysiological recording technology have not only overcome problems of poor convergence between physiological and behavioral measures (Abrams & Wilson, 1979) but also make such comparisons essential to the establishment of valid behavioral measures (Bellack, 1980). Attention must also be directed, finally, to a preliminary determination of which midi-level items are most predictive, both of physiological indices and of general ratings of social skill and anxiety.

The present study is a test of a battery of nine categories of nonverbal behavior, measured in terms of midi-level ratings, and evaluated in a standardized role play situation against both global and physiological assessments. There was, in our view, no apriori basis on which to predict the midis that would best predict those independent and standardized assessments of social skill. Nor was there an attempt here to actually test midis in therapy sessions; the usual practice in the social skills area is to demonstrate new assessment devices in an analogue situation where subjects are asked to role play socially demanding interactions. The first step, then, is the demonstration of which midis might be best suited for use by clinical practitioners.

## METHOD

### *Subjects*

Subjects were 27 paid college students, all of them males, recruited from two local universities. Twenty-six of those subjects produced videotaped recodings of sufficient quality for judges to use for rating purposes. Males were used as subjects because the role play test in which they participated had been standardized on males.

### *Judges*

Women were used as judges because of overwhelming indications in the literature that they excel as observers for tasks of the sort required here (Boice 1982c; Wollfolk, Abrams, & Abrams, & Wilson, 1979). All four judges were college graduates and all had been extensively trained using standard procedures developed in our laboratory. Essentially, pairs of judges began training with practice tapes in which they viewed specific examples of the construct to be rated and an explanation of how that instance should be rated. The judges were instructed that while they should use specific indicators to form ratings, it would be impossible to completely operationalize these constructs. Thus, they were coached to form ratings that would reflect overall impressions of social skill and of social anxiety, *not* the mere summing up of various indicators. These judges were unaware of the purpose of this study and had no prior knowledge of the subjects.

Judges also practiced judging tapes similar to those used in actual ratings, for some 20 hours. During that time they were given 'criterion feedback' on 25 percent of their ratings, after their ratings had been recorded. Criterion ratings were obtained, depending on the tapes, from three to six senior staff members. Judges remained in this training phase for at least a period approaching 20 hours and until their degree of agreement with the criterion ratings exceeded an intraclass correlation of .80.

One pair of judges made independent global ratings. Following each role play scene they rated a subject on both social skills and social anxiety with one score for each on an 11-point Likert scale. Low scores indicated either low anxiety or low social skills. The second pair of judges made independent midi ratings on the same subjects. They made ratings in the same basic fashion as did the global judges but rated each of nine behavioral categories for social anxiety and social skill on 11-point scales.

Criterion feedback continued for both pairs of judges as they rated the 26 videotapes; as during training feedback was provided on 25 percent of their ratings. The difference between feedback given during training and during experimental tapes was that explanations of the judges' ratings were confined to the former.

*Procedure*

Subjects began by signing an informed consent form and by completing a demographic information questionnaire. Some questions pertained to their abstinence, as requested beforehand, from smoking and consumption of alcohol or caffeine prior to participation. All subjects reportedly complied with this precaution against confounding physiological measures of social anxiety.

Following a brief explanation, a heart-rate monitoring harness was strapped to the chest of each subject, beneath his shirt. Thereafter, the heart rate was recorded continuously. From this point and until the onset of the role play procedure, instructions were presented to the subject via a tape recorder. Then, in the two-minute period preceding the role plays, the subject was instructed to 'relax.'

The overall protocol for each subject lasted 25 minutes and included two different role play procedures presented sequentially. The first role play was adapted from Borkovec et al. (1974) and was designed to identify subjects who were heart-rate reactors in a socially provocative situation. The setting, which entails an interaction with an attractive female confederate, was introduced as follows:

> In a minute, a woman will enter the room and sit in the chair next to yours. We want you to make the very best impression on her that you possibly can. We will be videotaping and watching you from close range so that we can rate every detail of how well you communicate. We will tell you when to begin talking to her. She will not talk back to you at all, but you should keep talking until you are told to stop. Remember, she will not talk to you. Your task is to make the very best impression on this woman that you can. She will be coming into the room very soon. Just wait for further instructions.

One minute after the confederate had entered and seated himself in the chair next to the subject, the final instruction for the subject to begin his interaction was given. At the end of a three-minute period, the confederate left the room making the end of this procedure.

The SSIT role-play procedure (Monti et al., 1980) immediately followed the Borkovec procedure. It consists of eight videotaped role-play interactions designed to assess the subjects' responses to the following situations: (a) disapproval, (b) assertiveness, (c) confrontation, (d) heterosexual contact, (e) interpersonal warmth, (f) rejection by parents, (g) interpersonal loss, and (h) positive feedback. For each situation a narrator reads a script describing the particular situation, a confederate offers a prompt and the subject is expected to respond during a 15-second response interval. Four of the situations involve a male confederate and four involve a female confederate. Both the order of the confederates

and the order of presenting the situations were randomized across subjects. Two practice role plays were given prior to the first SSIT situation and the narrator addressed any questions that the subject had.

*Measures*

**Physiological.** An Exercentry© monitor was used to measure heart rate. This is a self-contained monitor (½" × 3" × 2"), which continuously measures pulses corresponding to "R" wave occurrence from surface electrodes placed on the subject's chest. For each beat to beat interval, instantaneous heart rate measured in beats per minute is calculated and made available in analogue form. This instrument unobtrusively measures heart rate reliably and consistently in spite of normal bodily movements such as posture shift and gestures (Leelarthaepin, Gray, & Chesworth, 1980). For this study, the Extersentry© was modifed such that pulses from the unit were recorded into a stereo tape recorder and later input into a cardiotachometer for graphic display of instantaneous heart rate. The cardiotachometer records were scored manually with a reliability of .98 (Pearson product-moment coefficient) for two research assistants.

In order to provide meaningful units of heart rate data during the Borkovec procedure, the heart rate data from each 15-second response interval throughout the entire Borkovec procedure were summarized by one score for each interval. The maximum heart rate for each interval was chosen because of its use in other studies investigating role-play tests (Abrams & Wilson, 1979), and since an event-related response representing peak arousal was desired (Jennings, Berg, Hutcheson, Obrist, Porges, & Turpin, 1981). This procedure resulted in 21 sequential intervals in which heart rate data were measured.

To identify heart-rate reactives and nonreactives, a difference score was computed based on the heart rate change in beats-per-minute from the last 15 seconds of the second minute of the relaxation period to the last 15 seconds of the minute preceding the point where the female confederate entered the room. Subjects whose difference scores fell within the upper third of this sample were defined as heart-rate reactives. The range of heart-rate change for heart-rate reactives was 32 to 50 beats-per-minute. Subjects whose difference scores fell within the lower third of this sample were defined as nonreactives. There were eight subjects in each subgroup.

To provide meaningful units of comparison between behavioral and heart-rate data during the SSIT procedure, each SSIT item was examined individually and the heart-rate data from each item were summarized again by one score over a 15-second interval (the response interval for one role play). Once again, the maximum heart rate for each item interval was chosen as the summary score. In order to adjust for individual differences in heart rate variation, the maximum heart rate was range-

corrected such that the maximum score for each interval was expressed as a proportion of the range between each subject's true maximum and minimum responses (Lykken, 1975).

**Midi level behavioral ratings.** Nine categories of nonverbal behaviors were chosen for midi-level ratings. One influence on these choices was a preference for behaviors such as facial expression which have some basis in our primate heritage and in ethological description (Boice, 1982a). Another was the desire to represent a broad range of nonverbals, from postures, gestures, and facial expressions to vocal characteristics (Harper, Weins, & Matarazzo, 1978). The third influence was the conclusion by Conger and Conger (1982) that the measurement of both the components and process of social skills are necessary for a meaningful picture. So despite the controversy surrounding the assessment of "interactioral synchrony" (Gatewood & Rosenwein, 1981), we included a category in which judges rated subjects' sense of social timing.

The nine categories of nonverbal behavior were defined as follows:

1. *Extremity movements*: Repeated and undirected movements of the hands or feet (and sometimes the head), often in rapid or awkward form (e.g., tapping with the toes in a repetitive and noninstrumental way).
2. *Self-manipulations*: Holding or touching self, either via movement (e.g., preening) or with obvious tension or hold a body part.
3. *Facial expression*: Facial indications of discomfort (especially tension as in a scowl or forced smile; nervous tics) at one end of the continuum and of appropriate smiling and relaxed expression at the other end.
4. *Posture*: Indications of a rigid, tense sitting posture at one end of the continuum and of a relaxed and apparently comfortable style at the other.
5. *Orienting*: Constant orientation of the subject's trunk toward the confederate and of his gaze about half of the time at one end of the continuum, and orienting away with trunk and eyes at the other.
6. *Gestures*: Use of movements that accompany speech in an expressive but not excessive fashion.
7. *Voice quality/tone*: Both quality and tone appropriate to content and situation (e.g., inappropriate quality/tone might be indicated by a high-pitched, quavery voice).
8. *Speech rate/pressure*: Both speech rate and use of silence appropriate to content and situation (e.g., anxious subject may talk too rapidly and/or too stridently).
9. *Sense of timing*: The appropriate synchrony of the subject's verbal and nonverbal messages and of his interations with the confederate's movements (e.g., subject smiles while delivery a compliment; delays appropriately in responding).

## RESULTS

### *Judge's Reliability*

Generalizability coefficients (Cronbach, Gleser, Nanda, & Rajaratnam, 1972) were used to estimate the global ratings of the first two judges over the 26 videotapes. The coefficients were .82 for ratings of social anxiety and .88 for ratings of social skills. This result indicates that the ratings for these two judges are highly generalizable to the universe of randomly selected judges and that both social anxiety and social skills scores could be justifiably reported as averages of these judges' ratings.

Reliabilities for midi ratings of the second pair of judges were estimated using Cronbach Alpha and Pearson product-moment correlations. The Cronbach Alpha intraclass correlation coefficient is a conservative measure of how well ratings can be generalized across judges, one whose estimate of reliability takes unequal variances across observations into account. The Pearson product-moment correlations indicate the magnitude of correspondence between the two judges (Table 1). The Pearson r's range from .75 to .95, the Cronbach alphas from .85 to .97; taken together, these coefficients indicate reliabilities adequate for each of the behavioral categories and between the two judges. There are, finally, no indications of significant differences between the two methods of estimating reliability suggesting, as for global judgments, that midi scores could legitimately be computed as an average of the judges' ratings.

### *Midis as Predictors of Skill and Anxiety*

A stepwise multiple regression analysis indicated that midi level predictors for global skill ratings include voice quality/tone and sense of timing (Tables 2 & 3). The first step of the regression analysis, with only speech/rate pressure included, yielded a multiple correlate of .77. With voice as the next predictor the $R$, increased to .83 where it remained stable. The stepwise linear composite of all the midi predictors to the criterion produced a multiple correlation coefficient of .56 and accounted for 31 percent of the variance of the criterion, global ratings of social skill. There was a significant relationship between the predictor set and the criterion ($F(1,18) = 8.39$, $p < .01$).

Table 1

Reliability Coefficients for Midi Level Behavioral Ratings

| Behaviors | Cronbach Alpha | Pearson r |
|---|---|---|
| Extremity Movements | .91 | .85 |
| Voice | .89 | .83 |
| Gestures | .89 | .86 |
| Facial-expressions | .94 | .89 |
| Self-manipulations | .85 | .75 |
| Orienting | .93 | .90 |
| Posture | .86 | .82 |
| Sense of timing | .97 | .95 |
| Speech rate/pressure | .93 | .89 |

Table 2 (second column) indicates that midi level predictors were multiply correlated with global anxiety at .77 ($F(1,18) = 25.57$, $p<.01$). Table 3 indicates that extremity movements, self manipulations, and gestures were the midis significantly associated with global anxiety.

Table 3 lists the bivariate correlations between the predictor behaviors and the global criteria. Two categories of nonverbal behaviors, voice quality/tone and sense of timing were significantly related to global ratings of social skill. Three different categories, extremity movements, self-manipulations, and gestures, were all strongly related to global ratings of social anxiety.

Table 4 depicts the bivariate correlations between the midi-level measurements. Overall, body movement categories (self-manipulations, orientation, gestures, postures) correlated well with each other and with facial expression but not with the vocal categories (speech rate/pressure, voice quality/tone). Vocal categories, similarly, correlated well with each other but not with most of the other categories just mentioned. Only

Table 2

Multiple Correlations: Midi Level Behaviors as Predictors of Global Anxiety, Skill Ratings, and Average Adjusted Heart Rate as Criteria

| Predictors | Criteria | | |
|---|---|---|---|
| | Skill | Anxiety | Heart Rate |
| Speech Rate/Pressure | 1.47[1] (F = 8.40)[2]** | | |
| Voice | -.77 (F = 2.30)* | | |
| Extremity Movements | .63 (F = 4.75)* | | |
| Self Manipulations | -.61 (F = 4.70)* | .81 (F = 60.47) | |
| Voice | | .15 (F = 2.27) | |
| Multiple Correlation | .83 | .87 | |
| R. Square | .70 | .76 | |
| Adjusted R. Square | .64 | .74 | |
| F | 12.77** | 38.12** | |

* p < .05
** p < .01
1 Standardized Beta Weights
2 F Value of Beta Weights

postures, of all these, correlated well with all other categories. The one "process" variable, sense of timing, correlated highly with gestures, postures and both vocal categories. It appears that within category types, bodily or vocal, there is a fair amount of redundancy in the prediction of criterion.

### *Midis as Correlates of Physiological Reactivity*

The initial regression analysis indicated no midi level predictors of physiological arousal. Given the absence of midi-level predictors of physiological arousal and the recent arguments, cited

Table 3

Zero Order Correlations Between Global Anxiety Skill Ratings and Adjusted Heart Rate

| | Global Skill | Global Anxiety | Adjusted Heart Rate |
|---|---|---|---|
| Extremity Movements | .33* | .75*** | .16 |
| Self Manipulations | .17 | .85*** | .06 |
| Facial Expression | .07 | .53** | .02 |
| Orienting | .21 | .79*** | .14 |
| Gestures | .43** | .75** | .12 |
| Voice | .71*** | .39* | .19 |
| Speech Rate/Pressure | .77*** | .38* | .21 |
| Sense of Timing | .75*** | .39* | .22 |
| Posture | .26 | .72*** | .23 |

* $p < .05$
** $p < .01$
*** $p < .001$

earlier, for interindividual differences in physiological response style (Lawler, 1980), subsequent analyses were performed on two subject groups based on subjects' heart-rate responsivity to the Borkovec procedure. As defined under Methods, nine subjects were categorized as heart-rate reactors and eight as nonreactors.

A multiple regression analysis was performed to determine if membership in these two groups could be shown to relate significantly to a linear combination of midi-level behavior predictor variables on the SSIT. Results of this analysis indicated that self-manipulations was the midi-level behavior variable which was significantly correlated to reactivity on the Borkovec procedure. The overall multiple correlation between the midi level behaviors and reactivity in the Borkovec procedure was .55, accounting for 31 percent of the variance ($F(1,13) = 5.60$, $p < .05$).

To address the question of which do better in predicting heart rate response in an anxiety provoking situation (midi-level behavioral or global ratings), behavioral ratings on the SSIT and physiological responsivity on the Borkovec were further analyzed.

The correlations between the global skill and global anxiety ratings with reactivity on the Borkovec procedure were .25 and −.39, respectively ($p > .05$). Thus, global measures of skill and anxiety accounted for an insignificant amount of variance in the Borkovec measures. Midi level measures, in contrast were significantly correlated with this measure of emotional reactivity (Table 2).

## DISCUSSION

Without exception the midi-level measurements of nonverbal behavior categories used here proved to be reliable and convenient to use. Despite their requirement of rating nine categories in each episode, midis were at least the equal of globals in terms of observer reliability. In terms of correlating with physiological measurements of social anxiety, midis were superior to globals; whereas global judgments do not appear to correlate with heart rate responding in this standardized role play situation, midi judgments, particularly of self-manipulations, did. The import of this convergence of measures is worth emphasizing; the failure of other approaches to the assessment of social skill/anxiety to correlate with an independent and meaningful index like physiological arousal has been a major concern for social-skills researchers. The caution necessary in interpreting this as yet unreplicated finding of convergence with heart rate must also be emphasized (Hersen, Bellack, & Turner, 1978).

What can be advocated strongly is that midi-level measurements appear to be suitable for use in clinical settings. Midis offer the same ease of use as do globals but also offer much of the specificity of micros. Moreover, the midi concepts used here had apparent face validity: Different categories of nonverbal behaviors correlated with global ratings of social anxiety and of social skills and categories of nonverbal behaviors correlated most highly with other categories within the same type.

Of the nine categories of nonverbal behavior tested here, five correlated significantly with criterion measures: voice quality/tone and timing predicted global skill; extremity movements, self manipulations, and gestures predicted global ratings of anxiety. Each of these merit further examination in clinical research.

What can be said about these preliminary indications of construct validity in midi-level measurements of nonverbal behaviors? As regards the specification of social skills, two tasks remain before firm conclusions can be drawn. First, these concepts must be tested in real clinical settings and, of course, with clinical sub-

Table 4

Zero Order Correlations Between Midi Level Behaviors

| | Extremity Movements | Self-Manipulation | Facial Expression | Orienting | Gestures | Voice | Speech Rate/Pressure | Sense of Timing |
|---|---|---|---|---|---|---|---|---|
| Extremity Movements | | | | | | | | |
| Self-Manipulation | .90*** | | | | | | | |
| Facial Expression | .70*** | .70*** | | | | | | |
| Orienting | .82*** | .86*** | .65*** | | | | | |
| Gestures | .93*** | .87*** | .68*** | .88*** | | | | |
| Voice | .35 | .29 | .17 | .35 | .48* | | | |
| Speech Rate/Pressure | .35 | .29 | .16 | .36 | .50** | .97*** | | |
| Sense of Timing | .36 | .30 | .19 | .35 | .50** | .98*** | .99*** | |
| Posture | .88*** | .84*** | .70*** | .83*** | .87*** | .43* | .39* | .41* |

* $p < .05$
** $p < .01$
*** $p < .001$

jects independently judged to have skill deficits. Second, the specification of skills must be linked to clinical changes which produced improvements in social functioning beyond the therapeutic context (Kupke, Calhoun, & Hobbs, 1979). So, where social skills researchers are concerned, the specification of five or more midi-level categories is merely a matter of inductive identification. Researchers of nonverbal communication, in contrast, will express some interest in the logic behind the battery of items selected for use in clinical settings. It could be argued, for instance, that the relatively poor performance of postures as a criterion predictor is due to the low levels of communicative specificity assumed to operate in these kinetic messages (Harper, Weins, & Matarazzo, 1978). But this is little more than second guessing. In fact, we still know little about how a broad variety of nonverbal behaviors act in concert to provide information in dimensions like social-skilll and society anxiety.

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