

## **The Relevance of Specific Conversational Behaviors to Ratings of Social Skill: An Experimental Analysis**

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*Research on the social effectiveness of specific conversational behaviors is reviewed and a new study is presented. Eight versions of the same tape-recorded conversation between a man and a woman were prepared in a 2 × 2 × 2 design, where the woman systematically varied her conversation either high or low on questions, compliments, and 4-sec latencies. Subjects listened to one of these tapes and rated the female's social skill. Results of the major social skill variable showed that high questions and high compliments elicited higher skill ratings. The effect of low latencies was only marginally significant. While other factors such as personal appearance or self-evaluation differences may also be important, this study suggests that it may be valuable to include assessment and training relevant to compliments and questions (and possibly latencies) in programs for women who are socially anxious.*

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**KEY WORDS:** social skills; experimental validity; discriminant validity.

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## INTRODUCTION

The search for specific conversational skill deficits among socially anxious persons has been difficult. It has not been hard to show that persons who identify themselves as socially anxious or who date infrequently evaluate their social interactions negatively. But it has been considerably harder to pinpoint the social behaviors that these people may lack. This is true despite the fact that behavioral coders, confederates, and naive subjects often rate such individuals more negatively on social skill ratings (e.g., Arkowitz *et al.*, 1975; Greenwald, 1977).

Methods of identifying social skills might be divided into three types.<sup>5</sup> By far the most common procedure involves the comparison of known groups such as persons who self-report social anxiety or comfort or persons who are low vs. high in dating frequency (Arkowitz *et al.*, 1975; Biglan, *et al.*, 1979; Borkovec *et al.*, 1974; Glasgow and Arkowitz, 1975; Greenwald, 1977; Rehm and Marston, 1968; Twentyman and McFall, 1975). This approach has the advantage of comparing extreme groups so that differences are more likely to be detected. However, extreme groups may differ in extraneous ways, and the results of these studies provide no guarantee that the identified behaviors are critical. A second method, which compliments the known-groups comparison, involves correlating ratings of social skill with measures of specific social responses (Glasgow and Arkowitz, 1975; Kupke *et al.*, 1979b). Ratings may be obtained from behavioral coders, confederates, or other naive subjects. The advantage of this procedure is that it permits us to check the impact of the behaviors we study against the perceptions of others. Here too, however, the existence of such correlations does not ensure that the behavior in question is casually related to the skill rating. Other unknown factors could be responsible for variation in both measures. A third method could potentially provide the strongest evidence of important social behaviors. In it the levels of specific conversational behaviors are experimentally manipulated and the impact of these manipulations on naive subjects is examined (Kupke *et al.*, 1979a).

Results from these three types of studies have been fairly limited. Moreover, the bulk of these studies has used known-groups comparisons, without subsequently documenting the relevance of specific behaviors to the evaluation of social skill. Behavioral interactions are difficult to code reliably, and only a limited number of behaviors were coded in the nine studies cited above. Time variables are easier to code and have been used most

<sup>5</sup>We have not included studies on the components of assertive behavior within the domain of this review.

often. Some of these studies coded more than one time variable or had more than one type of behavioral interaction. Measures such as subject talk time, latencies, talk ratio, and the number of words spoken were significant in 14 of 33 instances.<sup>6</sup> Positive attention behaviors also appear related to social skill. Only four studies in this review have coded verbal positive attention behaviors: questions and agreements by Arkowitz *et al.* (1975); personal attention (talking about the other or asking questions) by Kupke *et al.* (1979b); compliments, agreements, and questions by Biglan *et al.* (1979); and personal attention by Kupe *et al.* (1979a). Positive attention was significantly related to social skill in both studies by Kupke *et al.* (1979a,b). Questions and compliments were significant in one of three behavioral interactions by Biglan *et al.* (1979), while the number of agreements did not discriminate between socially anxious and socially nonanxious individuals. The study by Arkowitz *et al.* (1975) did not show questions or agreements to be relevant, but reliabilities were not presented to guarantee that the coding process accurately reflected the frequency of these events. The number of overt or verbal indicators of anxiety was significant in three of five instances [Borkovec *et al.* (1974), one of two variables; Rehm and Marston (1968); Twentyman and McFall (1975), one of two interactions]. None of the other behaviors coded in the studies above has been consistently related to social skill functioning. Minimal conversation encouragers (usually defined to include statements like "uh huh" or "oh really?") was nonsignificant in five of five instances [Arkowitz *et al.* (1975); Greenwald (1977), two interactions; Kupke *et al.* (1979a,b)].

Based on these studies it appears that anxiety signs, speech frequency/latency, and certain personal attention or positive reinforcement behaviors may relate to social skill differences. In the following study, we attempted to test experimentally the relevance of some of these behaviors. Eight tape recordings of the same conversation between a man and a woman were prepared in a 2 × 2 × 2 design, where the woman systematically varied her conversation either high or low on latencies, questions, and compliments. These tapes were heard by subjects and rated for the female's social skill. In an attempt to show discriminant validity, subjects were also asked to rate other socially desirable characteristics of the woman. It is important that studies purporting to measure conversational skills distinguish this factor from other socially desirable characteristics. We generally did not expect these other ratings to vary systematically with the levels of the conversational behaviors we manipulated.

<sup>6</sup>This is not including the correlational analyses by Glasgow and Arkowitz (1975). These data were already effectively counted in the original known groups comparisons they did.

## METHOD

### Subjects

Eighty-four subjects were recruited by announcements in undergraduate courses, primarily in the Department of Speech. Subjects were strictly volunteers; no compensation was given for their participation. The mean age was 20.9 years, with an SD of 2.8. By coincidence, 42 of the subjects were male and 42 were female. The mean number of speech courses they had taken was 2.9 (based on a sample excluding 10.7% no responses), with an SD of 2.7.

### Procedure

*Taped Conversations.* A script was written of a man and a woman talking over lunch in a crowded cafeteria. They had seen each other on campus before, but had never met. The conversation covered usual acquaintanceship topics such as what they were studying, where they lived, where they worked, and what they liked to do in their spare time. The female's script was then altered to produce eight versions of the conversation, representing the eight combinations of high and low questions, compliments, and 4-sec latencies. We attempted to standardize the male's script in each conversation as much as possible. The female had either 4 or 16 questions on each tape, 0 or 5 compliments, and 1 or 7 4-sec latencies.<sup>7</sup> These values were based on previous work (Biglan *et al.*, 1979) which analyzed the frequency of these behaviors among anxious and nonanxious women and by the constraints of the conversation we designed. The tapes were made at the university radio station, and two graduate students in speech communication read the scripts. Cafeteria sounds were piped in as background noise. The conversations were approximately 4-min long.

*Ratings.* Each subject listened to one of the tapes and answered 15 questions. The first 14 were ratings on a 1 to 7 scale, while the last question required a "yes" or a "no" answer. The first rating asked how easy it was to hear and understand the tape. This was to check for equal voice quality among the tapes. The next 13 ratings were all about the woman. These

<sup>7</sup>Two of the low-questions tapes had three questions instead of four, and one of the low-latency tapes had zero latencies instead of one. These mistakes in the production of tapes were not realized until after the study was completed. They should just add noise to the analyses and not interfere with the high-low categorization of any tape.

Table I. Ratings Clusters\*

#### Cluster 1: Social skill variable

2. How much would you have enjoyed talking to this woman in the conversation you just heard?
3. How much would you like to talk to this woman again?
4. How much would you be interested in getting to know her better?
9. If this woman invited you to a party she was having, how interested would you be in attending?
6. How many friends do you think this woman has?
11. How skilled a conversationalist do you think this woman is?
8. How easy do you think it would be to carry on a conversation with this woman?
12. How comfortable do you think you would be talking to this woman?
7. How comfortable did this woman seem to be?

#### Cluster 2: Halo variable

10. How much do you think this woman likes animals?
14. How good a cook do you think this woman is?

#### Cluster 3: Halo variable

13. How physically attractive do you think this woman is?

#### Cluster 4: Halo variable

5. How often do you think this woman exercises?

#### Cluster 5: Social skill variable

15. We are contemplating an acquaintanceship study at the end of this term. It would involve people meeting the woman you just heard talking. If you would like us to contact you to see if you're interested in participating, please leave your name with the experimenters on the way out.

\*All of these questions were rated on a 1 to 7 scale except No. 15, which had a "yes" or "no" answer.

questions are shown in Table I. Nine of these ratings were about her social skills. The other four were "halo" variables, such as "How good a cook do you think the woman is?" The issue is one of discriminant validity. We generally expected that scores on the social skill ratings would vary systematically with the three conversation behaviors we manipulated, while the halo variables would not. One of the halo variables, however, asked the subjects to estimate how physically attractive the woman was. This was a halo variable in the sense that the subjects did not see the woman, but it should be remembered that several studies have shown that physical attractiveness ratings correlate with social skill (Glasgow and Arkowitz, 1975; Greenwald, 1977). We were interested in whether this rating would correlate with the social skill ratings even though the woman was not seen. A fifteenth question was also presented, which asked subjects if they would

like to be contacted about participating in another study which would involve meeting the woman. We considered this to be a behavioral measure, since subjects were agreeing to potential involvement with the woman. The other 13 ratings were self-report.

**Testing.** Eight or fewer subjects signed up for each 20-min test period. The order of the tapes was randomly determined and this order was used continuously from one testing period to the next in order to ensure that an equal number of subjects listened to each tape. Subjects were told that we were interested in the acquaintanceship process and we wanted to get their reactions to a tape recording of two people who had never talked before but had seen each other on campus. Subjects were not told the hypotheses of the study or that we had different versions of the same conversation. Each subject listened to their tape through earphones and was then given the rating form to fill out.

## RESULTS

### Evidence of Random Assignment

Subject characteristics were tested in a one-way analysis of variance across the eight tapes. There were no differences across tapes in the age of subjects,  $F(7,76) = 1.58, P < 0.16$ ; the sex<sup>a</sup> of the subjects,  $F(7,76) = 0.56, P < 0.79$ ; or the number of speech courses they had taken,  $F(7,67) = 0.65, P < 0.71$ .

### Evidence of Equal Voice Quality

The ease of hearing and understanding the tape was rated by subjects. A one-way ANOVA revealed no differences across tapes,  $F(7,75) = 1.22, P < 0.31$ .

### Evidence of Discriminant Validity and Question Similarity

Nine ratings of social skill and the behavioral question were given in order to guarantee that a sufficiently broad range of social adequacy was assessed. Because the variables were intercorrelated, separate analyses of each item would be inappropriate. A cluster analysis (BMDP1M; Dixon,

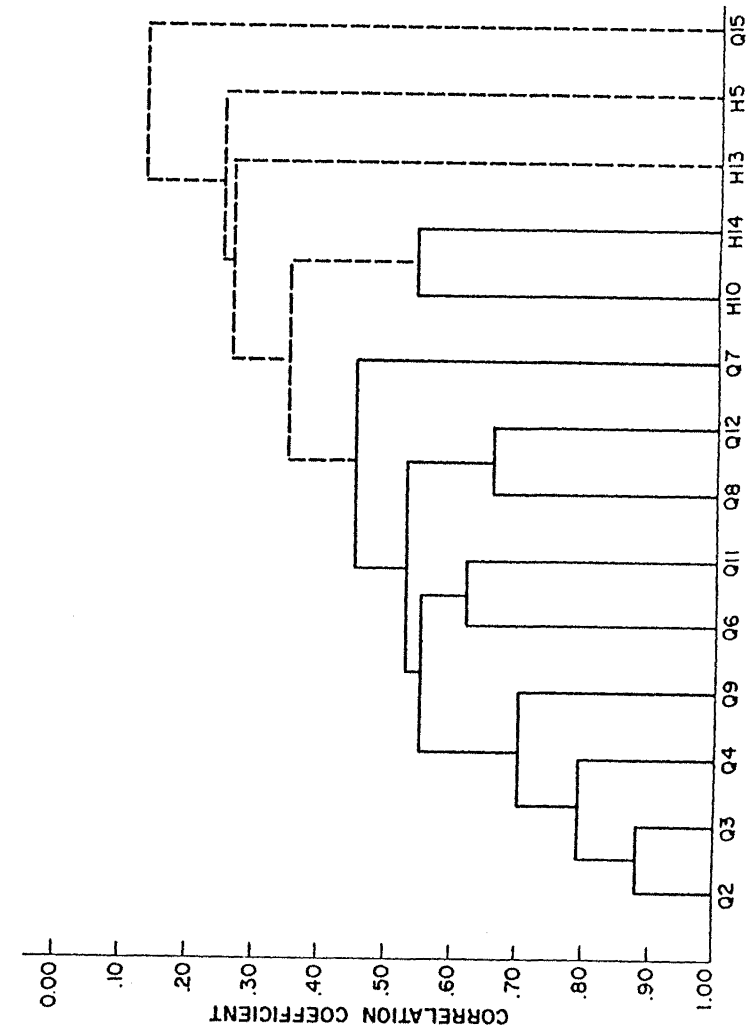


Fig. 1. Cluster analysis of ratings.

<sup>a</sup>Sex was coded 1 for males and 2 for females. These values were then used in the ANOVA.

1975; Hartigan, 1975) of all 14 variables, including the four halo ratings, was conducted in order to group similar items. This procedure aggregates variables in a hierarchical fashion based on their average intercorrelation with the other variables in the cluster. Figure 1 shows the clustering of variables. Each question is designated with a "Q" if it was a question expected to assess social skill and an "H" if it was a halo variable. We stopped the process on the ninth step, after 9 of the 10 social skill variables had clustered and two of the halo variables grouped together. This created two social skill variables and three halo variables. One of the social skill variables consisted of all nine skill ratings, and the other was the behavioral measure. Additional clustering does not appear warranted on theoretical or statistical grounds. The pattern of clustering after the ninth step is indicated by dashed lines in Fig. 1. The grouped variables are shown in Table 1.

### Relationships Between Behaviors and Ratings

Scores on questions which clustered together were put in standard score form and added to the scores of other questions within the cluster. These values were then analyzed in a three-factor analysis of variance (questions  $\times$  compliments  $\times$  latencies) with two levels in each factor.

**Social Skill Ratings.** For the nine-question social skill variable, high questions produced a higher skill rating,  $F(1,76) = 7.69, p < 0.01$ ; high compliments produced a higher skill rating,  $F(1,76) = 4.61, p < 0.04$ ; and latencies was marginally significant,  $F(1,76) = 3.45, p < 0.07$ , with low latencies tending to produce a higher skill rating. The two-way and three-way interactions were not significant. For question 15, the behavioral measure, none of the main effects or interactions was significant.

**Halo Ratings.** Question 5, amount of exercise, was nonsignificant for all main effects and interactions. The main effect of questions was marginally significant,  $F(1,76) = 3.1, p < 0.07$ , with high questions tending to produce a higher rating. Questions 10 and 14 added together, liking animals and being a good cook, had no significant main effects of questions, compliments, or latencies. The compliments  $\times$  latencies interaction was significant,  $F(1,75) = 5.10, p < 0.03$ , but not of further interest because none of the means was significantly different from each other.

Question 13, the physical attractiveness rating, was significant for the main effect of questions,  $F(1,76) = 5.00, p < 0.03$ , and the questions by compliments interaction,  $F(1,76) = 8.53, p < 0.01$ . Because the interaction was significant, the main effect of questions is uninterpretable (Keppel, 1973) and the effect of questions was analyzed separately at each level of compliments. When compliments were low, low questions produced a higher rating of attractiveness than high questions,  $F(1,39) = 15.05, p < 0.001$ . When compliments were high, there was no difference in

attractiveness ratings between high and low questions,  $F(1,41) = 0.20, p < 0.66$ .

With the exception of the physical attractiveness rating, these analyses indicate that the halo ratings did not vary systematically with the levels of compliments, questions, and latencies.

## DISCUSSION

In this study, the importance of compliments and questions when a woman talks to a man was confirmed experimentally for the main social skill variable. This variable consisted of nine ratings measuring a wide range of social adequacy. Naive subjects' ratings of the woman were affected by the levels of each of these behaviors. Low latencies were marginally associated with higher skill ratings ( $p < 0.07$ ). Moreover, subjects' social skill ratings did not correlate or cluster with the halo ratings. Subjects apparently were rating the social skill of the woman and were not simply responding to her in a generally positive way. With the exception of the physical attractiveness rating, the halo variables also did not covary in any consistent way with the levels of compliments, questions, or latencies.

The second social skill variable, which was a behavioral measure, was not affected by the levels of compliments, questions, or latencies. This question asked the subjects if they would like to be contacted for participation in a future study where they would meet and further get to know the woman. This rating also did not covary or cluster with any of the other ratings. It is possible that this question measures an orthogonal dimension of social skill which is not affected by the levels of questions, compliments, and latencies. A more reasonable interpretation is that subjects' answers were affected by other factors, such as their availability or interest in participating in another study. The woman's social skill may have had little influence on their decision.

If high levels of questions or compliments are associated with higher skill ratings for women, this may be specifically because of these behaviors, or it may be more generally because the amount of talking was increased. Further research should investigate the relative effectiveness of various conversational behaviors. Questions, compliments, and long latencies were selected because they appeared to be relevant based on past research. The relationship between perceived social skill and the timing or specific placement of behaviors within a conversation should also be investigated.

This study and the study by Kupke *et al.* (1979a) have presented experimental methodologies for confirming the validity of specific conversational behaviors. It is necessary to go beyond the known groups comparisons and correlational assessment studies in order to experimentally

test the relevance of specific conversational behaviors. Both of these studies have shown positive attention behaviors such as compliments and questions to be experimentally valid treatment and assessment targets in social skills research.

### REFERENCES

- Arkowitz, H., Lichtenstein, E., McGovern, K., and Hines, P. The behavioral assessment of social competence in males. *Behavior Therapy*, 1975, 6, 3-13.
- Biglan, A., and Kass, D. J. The empirical nature of behavior therapies. *Behaviorism*, 1977, 5, 1-15.
- Biglan, A., Glaser, S. R., and Dow, M. G. Conversational skills training for social anxiety: An evaluation of its validity. Paper presented at the annual meeting of the Speech Communication Association, San Antonio, Texas, November 1979.
- Borkovec, T. D., Stone, N. M., O'Brien, G. T., and Kaloupek, D. G. Evaluation of a clinically relevant target behavior for analog outcome research. *Behavior Therapy*, 1974, 5, 503-513.
- Curran, J. P. Skills training as an approach to the treatment of heterosexual-social anxiety: A review. *Psychological Bulletin*, 1977, 84, 140-157.
- Dixon, W. J. (Ed.). *BMD: Biomedical Computer Programs* (P series). Los Angeles: University of California Press, 1975.
- Glasgow, R. E., and Arkowitz, H. The behavioral assessment of male and female social competence in dyadic heterosexual interactions. *Behavior Therapy*, 1975, 6, 488-498.
- Greenwald, D. P. The behavioral assessment of differences in social skill and social anxiety in female college students. *Behavior Therapy*, 1977, 8, 925-937.
- Hartigan, J. A. *Clustering Algorithms*. New York: John Wiley & Sons, 1975.
- Keppel, G. *Design and Analysis: A Researcher's Handbook*. Englewood Cliffs, N.J.: Prentice-Hall, 1973.
- Kupke, T. E., Calhoun, K. S., and Hobbs, S. A. Selection of heterosocial skills. II. Experimental validity. *Behavior Therapy*, 1979a, 10, 336-346.
- Kupke, T. E., Hobbs, S. A., and Cheney, T. H. Selection of heterosocial skills. I. Criterion-related validity. *Behavior Therapy*, 1979b, 10, 327-335.
- Rehm, L. P., and Marston, A. R. Reduction of social anxiety through modification of self-reinforcement: An instigation therapy technique. *Journal of Consulting and Clinical Psychology*, 1968, 32, 565-574.
- Twentyman, C. T., and McFall, R. M. Behavioral training of social skills in shy males. *Journal of Consulting and Clinical Psychology*, 1975, 43, 384-395.