Western Journal of Speech Communication

The Official Journal of
The Western Speech Communication Association

Volume 41, Number 3 **Summer, 1977**

CONTENTS

Western Journal of Speech Communication is published four times a year—Winter, Spring, Summer, and Fall—by Western Speech Communication Association at Tempe, Arizona, and printed by the University Printing Department, University of Oregon, Eugene, Oregon. Subscription, including membership in The Western Speech Communication Association, is $10.00 per year, $18.00 two years; sustaining membership, $20.00 per year, $35.00 two years; library membership, $9.00 per year, $16.00 two years; student membership, $5.00 per year; single copies, $1.50 for numbers less than ten years old and $2.50 for older numbers. Subscriptions and orders for individual copies should be addressed to Dr. Robert O. Hirsch, Department of Speech Communication, Arizona State University, Tempe, Arizona 85281. Permission to reprint an article involves a fee of $50.00.

US ISSN 0043—4205

Relationships Between Vocal Activity and Perception of Communicators in Small Group Interaction

JOHN A. DALEY, JAMES C. MCCROSKEY, AND VIRGINIA P. RICHMOND*

THE MOST BASIC ELEMENT in the study of speech communication is vocal activity itself. Strangely, while relatively few investigations of this variable have been reported by scholars in speech communication, colleagues in our sister disciplines have devoted considerable attention to vocal activity in recent years. The results of this research indicate in general that the degree of an individual's vocal activity, the frequency and duration of an individual's interaction, is an important mediating variable in dyadic and small group interaction. It appears to have a particularly strong impact on the ways communicators perceive each other. This paper reports a study which attempted to extend our knowledge about the relationships between vocal activity and the perceptions of communicators.

Previous research has indicated that vocal activity is highly related to three perceptions about the communicator, specifically the communicator's status, the communicator's leadership, and the quality of the communicator's contributions. In addition, vocal activity has been found to be highly related to the influence the communicator has over others.[1]

Although vocal activity level most likely interacts with numerous other communication behaviors in stimulating perceptions of the individual on the part of other people, even when studied in isolation this communication behavior has been found to be a substantial predictor of several such perceptions. The way communicators are perceived by other communicators has

* Mr. Daly is a doctoral candidate in Communication at Purdue University. Mr. McCroskey is Professor and Chairman of the Department of Speech Communication at West Virginia University. Ms. Richmond is a doctoral candidate in Speech Communication at the University of Nebraska.

[1] For a thorough review of the previous research related to the impact of vocal activity on perceptions about communicators, see: John A. Daly, James C. McCroskey, and Virginia P. Richmond, "The Relationships Between Vocal Activity and Perception of Communicators in Small Group Interaction," paper presented at the Speech Communication Association Convention, Chicago, 1974.

been found to have a major impact on communication outcomes in the areas of interpersonal attraction, source credibility, and diffusion of innovations. Thus an important extension of the research on vocal activity would be an examination of its influence on perceptions of communicators in regard to interpersonal attraction, source credibility, homophily (interpersonal similarity), and power. The present study was designed as an initial attempt at such an extension. Specifically, it was designed to investigate the relationships between vocal activity level and interpersonal attraction (the task, social, and physical dimensions), perceived credibility (the dimensions of competence, character, sociability, composure, and extroversion), perceived homophily or interpersonal similarity (the dimensions of attitude, background, value, and appearance), and perceived power or ability to influence.

HYPOTHESES

Vocal Activity and Source Credibility. Previous research has indicated an essentially positive, linear relationship between vocal activity and perceived status, leadership, and quality of contributions. However, nonlinear relationships have been observed for these variables at extremely high vocal activity levels. Because the credibility dimensions of competence, character, sociability, and composure appear to be perceptions similar in nature to status, leadership, and quality of contributions, it was hypothesized that these variables would form essentially positive, linear relationships with level of vocal activity, but that the relationships would become nonlinear at extremely high levels of vocal activity. No *a priori* level was specified for this nonlinear trend.

The extroversion dimension of credibility, unlike the other credibility dimensions, relates specifically to perceptions of the outgoingness and verbosity of the communicator. Consequently, it was hypothesized that vocal activity level and perceived extroversion would form a positive, linear relationship.

Vocal Activity and Interpersonal Attraction. Because previous research has observed an essentially positive linear relationship between vocal activity level and liking, but with a nonlinear relationship at extremely high levels of vocal activity, similar relationships were hypothesized between vocal activity level and the three dimensions of interpersonal attraction; task, social, and physical. Again, no *a priori* level was specified for the expected nonlinear trend.

Vocal Activity and Homophily. Previous research concerning vocal activity has not directly investigated perceptions of interpersonal similarity, and thus there are no research results from this area upon which to generate hypotheses. However, it was believed that the level of one's own vocal activity would form at least a partial basis for perceptions of the interpersonal simi-

larity of other communicators. Thus it was hypothesized that vocal activity level and perceived homophily on the dimensions of attitude, background, value, and appearance would form nonlinear relationships with the highest level of perceived homophily occurring at or somewhat above the mean vocal activity level reported by the subjects.

Vocal Activity and Power-Influence. Because previous research has indicated a positive, linear relationship between vocal activity level and actual influence, it was hypothesized that vocal activity level and perceived power-influence would form a positive, linear relationship.

METHOD

Subjects

Subjects were 130 students in an introductory communication course. Participation was part of a general research requirement of all students enrolled.

Measures

The scales employed to measure the dimensions of interpersonal attraction were those developed by McCroskey and McCain.[2] Scales selected for measuring the five dimensions of credibility were developed by McCroskey, Jensen, and Valencia.[3] Scales for the three dimensions of homophily were chosen from the work of McCroskey, Richmond, and Daly.[4] Power-influence was measured by scales recommended by Lashbrook.[5] All scales were based on prior factor analytic work and had previously been found to have satisfactory reliability. The factor structure and reliability of the scales were examined for the present data and found to be comparable with previous research. To conserve space, these data will not be reported here but are available from the authors on request.

Procedure

Each subject was given a five-page booklet. The first page asked the subjects to indicate their sex (for control purposes) and to estimate the percentage of time they would normally talk in a five-person group. Also included on this page were instructions for completing the scales in the remainder of the booklet. At the top of the following four pages, the subjects were asked to "evaluate a man (or woman) who talked —— percent of the time in a small

[2] James C. McCroskey and Thomas McCain, "The Measurement of Interpersonal Attraction," *Speech Monographs*, 41 (1974), 261-66.

[3] James C. McCroskey, Thomas Jensen, and Cynthia Valencia, "The Measurement of the Credibility of Peers and Spouses," paper presented at the International Communication Association Convention, Montreal, 1973.

[4] James C. McCroskey, Virginia P. Richmond, and John A. Daly, "The Development of a Measure of Perceived Homophily in Interpersonal Communication," *Human Communication Research*, 1 (1975), 323-32.

[5] Velma Lashbrook, "Leadership Emergence and Source Valence: Concepts in Support of Interaction Theory and Measurements," paper presented at the Western Speech Communication Association Convention, Albuquerque, 1973.

group." Pages two and four requested evaluations of a man, pages three and five requested evaluations of a woman. Percentages of vocal activity were systematically varied in five-step intervals from 0 percent to 95 percent, with no subject asked to evaluate two people with less than a 15 percent differential. Each subject evaluated four people with varying vocal activity, but with no other information about the individual except the person's sex. This procedure resulted in 519 observations, one subject failed to complete the instrument for one stimulus source.[6]

Data Analyses

Data were subjected to two preliminary analyses and two primary analyses. The first preliminary analysis performed was a three-factorial multi-variate analysis of variance. The independent variables in this analysis were percentage of talking time, sex of subject, and sex of stimulus object. The primary purpose of this analysis was to determine whether the sex of the sub-

[6] Initially there was some doubt about the reliability of using descriptions of hypothetical individuals rather than having subjects actually engage in or observe real interactions. However, past research provided support for the decision to employ the hypothetic procedure. For example, Hayes and Meltzer, "Interpersonal Judgments Based on Talkativeness: I. Fact or Artifact?" *Sociometry*, 35, 1972, 538-61, in a four-part study, compared interpersonal evaluations based on a full knowledge of all verbal, vocal, and nonverbal cues with those based strictly on knowledge of vocal activity. In the first study, observers watched either a video-tape of a small group interaction or a panel of lights which represented the conversational patterns of the group members. In this latter condition, a light flashed every time a group member talked. The researchers found virtually no differences between the rankings of the individual group members made by observers in the video-tape condition and the light-board condition. The second study utilized a different, more salient topic and different rating scales. The results were quite similar to those obtained in the first study. The correlation between rankings of small group members made by video-tape observers and light-board observers was extremely high. The third study had the same observers watch both the video-tape and light boards. Again the correlation between actually observing a group discussion with all the verbal and nonverbal cues and watching a light board that represented purely the amount of vocal activity was extremely high. The fourth and final study compared rankings made from the light-board flashes and descriptions of the relative amount of talk in which each group member engaged. This latter condition was the same as the method used in our study. The correlations between these two types of stimuli, in terms of the interpersonal judgments made, were again very high. A. R. Allgeier, in a recently completed dissertation, "The Effects of Differential Amounts of Talkativeness on Interpersonal Judgments," Purdue University, 1974, replicated much of the Hayes and Meltzer research, extending their efforts to interpersonal attraction ratings and measures of perceived adjustment. In addition, while Hayes and Meltzer utilized male subjects, Allgeier chose to use females. His conclusions were similar to those of Hayes and Meltzer. Hayes and Sievers, "A Sociolinguistic Investigation of the Dimensions of Interpersonal Behavior," *Journal of Personality and Social Psychology*, 24, (1972), 254-61, utilized the Hayes and Meltzer findings in a way very similar to our approach. They sought to determine the traits associated with varying levels of vocal activity. Just as in our study, descriptions consisted of the percentages of time individuals characteristically spent talking. These talk-time percentages ranged from 5 percent to 75 percent. Finally, a check was made of our method via the examination of the previously well-evidenced relationship between vocal activity and perceived leadership. If our approach is justified, we would expect significant positive correlations between vocal activity and perceived leadership. Scales designed to measure perceived leadership were included among the items on the research instrument. The obtained correlations between vocal activity and perceptions reported on these scales were virtually identical to those reported in previous research.

ject and/or the sex of the stimulus object interacted wtih vocal activity on the dependent variables (credibility, homophily, attraction, power-influence). Since the dependent variables in this study were presumed to be uncorrelated or to have low intercorrelations (factorially independent), it was recognized that the appropriateness of multi-variate analysis was questionable. When a series of dependent variables are uncorrelated or have low correlations, multi-variate analysis of variance has been found to have lower power than univariate analysis of variance.[7] Consequently, the dependent variables were also submitted to a series of three-factorial analyses of variance employing the same independent variables as above.

The primary analyses of the data were Pearson "r" and eta correlations between vocal activity levels and the various dependent variables. These analyses provided the direct tests of the hypotheses of this study.

Data were also subjected to two series of *post hoc* analyses. It was suspected that the subjects' own vocal activity level in a group might affect how the subject would perceive another person on the basis of the other person's vocal activity level. Consequently, a series of two-factorial analyses of variance were performed on the dependent variables. One factor was based on the vocal activity of the hypothetical communicators. Three levels were created: Low (below 30%), Moderate (between 30% and 50%), and High (over 50%). These levels were chosen because the subjects in the study indicated a mean of approximately 40 percent as their own vocal activity level, with a standard deviation of 19.95. The range of 30-50 percent, therefore, included approximately one-half standard deviation on either side of the mean vocal activity level reported by the subjects. The second factor represented a comparison of the vocal activity level of the hypothetical communicator and that of the responding subject. This factor was dichotomized into two levels: Subject Higher (those subjects reporting higher levels of vocal activity than the hypothetical communicator) and Subject Lower (those subjects reporting lower levels than the hypothetical communicator). The sample was reduced by 24 observations in this analysis, because, for these observations, the subject and hypothetical communicator had identical vocal activity levels and, thus, could not be classified on the second factor in the analysis.

The post hoc examination of the data also involved a second series of two-factorial analyses of variance. The first factor was the same as in the previous analyses, low, moderate, and high vocal activity of the hypothetical communicator. The second factor was composed of similar classifications for the reported vocal activity of the subjects, low (below 30%), moderate (30%-50%), and high (over 50%).

The criteria set for significance of all tests was $p<.05$.

[7] Donald F. Morrison, *Multivariate Statistical Methods* (New York: McGraw-Hill, 1967); Maurice M. Tatsuoka, *Multivariate Analysis* (New York: Wiley, 1971); S. James Press, *Applied Multivariate Analysis* (New York: Holt, 1972).

RESULTS

Multivariate and Univariate Analyses of Variance

Results of the multivariate analysis of variance indicated significant effects for the vocal activity, sex of subject, and sex of stimulus main effects. The only significant interaction observed involved the sex of subject and sex of stimulus. The univariate analyses of variance indicated similar effects. In neither the multivariate nor the univariate analyses was any interaction involving vocal activity found to be significant.

The absence of any significant interactions between vocal activity and the other independent variables indicates that the main analyses (Pearson r and eta correlations) provide relatively uncontaminated estimates of the relationships between vocal activity and the dependent source perception variables.

Correlations and Tests of Hypotheses

Table 1 reports the obtained Pearson r and eta correlations between vocal activity and the 12 source variables. Table 2 reports the means at each vocal activity level for the 10 source perception variables found to be significantly related to vocal activity.

TABLE 1
CORRELATIONS BETWEEN VOCAL ACTIVITY AND SOURCE PERCEPTION VARIABLES

Source Perception Variable	Pearson r	p. of r	Variance Accounted for by r	Eta	p. of Eta	F for Eta vs. r	Variance Accounted for by Eta	P
Credibility								
Sociability	.53	<.0001	.28	.62	<.0001	.38	4.66	<.0001
Composure	.34	<.0001	.12	.48	<.0001	.24	10.42	<.0001
Competence	.32	<.0001	.10	.46	<.0001	.21	3.48	<.0001
Extroversion	.80	<.0001	.64	.83	<.0001	.69	4.36	<.0001
Character	—.03	NSD	—	.19	NSD	—	—	—
Power-Influence	.34	<.0001	.12	.50	<.0001	.25	10.59	<.0001
Homophily								
Attitude	.02	NSD	—	.29	<.001	.09	2.53	<.01
Value	.08	NSD	—	.25	<.05	.06	1.66	<.05
Background	.03	NSD	—	.18	NSD	—	—	—
Attraction								
Social	.11	<.05	.01	.37	<.0001	.14	4.40	<.0001
Physical	.12	<.01	.01	.26	<.01	.07	1.58	<.05
Task	.17	<.001	.03	.32	<.0001	.10	2.27	<.01

It was hypothesized that perceived competence, sociability, composure, and character would form essentially positive, linear relationships with level of vocal activity, but that the relationships would become nonlinear at extremely high levels of vocal activity. Although no relationship between vocal

TABLE 2

MEANS FOR *SOURCE PERCEPTION* VARIABLES SIGNIFICANTLY RELATED TO VOCAL ACTIVITY

		Source Perception Variable									
Vocal Activity Level	Sample Size	Sociability	Composure	Competence	Exrtoversion	Attitude	Values	Power-Influence	Social Attraction	Physical Attraction	Task Attraction
0	27	9.6	10.0	11.9	6.4	17.1	10.8	11.4	17.4	19.3	17.8
5	26	12.8	12.5	14.3	7.2	19.3	11.8	13.7	21.0	20.6	19.3
10	25	13.1	12.7	14.5	8.8	18.6	10.1	13.8	21.4	18.3	22.9
15	20	15.0	14.4	15.4	10.0	20.8	11.7	15.0	23.1	19.2	21.7
20	27	15.8	15.9	16.6	12.1	24.3	11.9	15.8	23.7	20.6	21.1
25	30	17.2	15.2	17.1	13.4	23.1	12.0	15.8	23.3	21.0	22.4
30	24	18.1	17.3	17.0	15.9	23.1	11.8	16.8	25.4	21.2	22.2
35	24	18.6	16.8	17.4	15.8	23.2	11.5	16.0	25.3	20.7	23.1
40	27	18.4	18.3	17.8	18.1	23.3	12.1	16.9	25.4	21.4	23.7
45	32	20.6	19.2	18.5	20.2	20.8	12.6	16.9	25.4	22.0	24.3
50	27	20.0	19.6	18.7	20.7	23.2	12.4	17.3	25.7	22.1	24.9
55	24	20.3	17.1	16.6	22.0	21.8	11.3	16.7	24.0	20.5	21.8
60	26	21.5	19.0	20.7	22.5	23.7	12.5	18.1	26.2	20.8	25.5
65	24	21.4	20.8	18.6	23.1	24.8	12.0	17.7	25.3	20.8	23.3
70	26	21.7	20.2	18.6	23.7	23.5	12.7	17.5	24.3	20.0	23.8
75	30	20.6	19.2	19.0	23.3	20.9	12.5	16.7	24.1	22.2	24.8
80	24	21.5	18.0	19.7	24.5	21.0	11.0	17.5	24.4	21.1	24.3
85	25	20.8	19.2	17.2	25.2	20.8	12.7	16.6	23.5	20.2	24.4
90	25	20.2	16.0	16.9	25.6	19.4	11.0	15.9	19.4	20.6	21.3
95	26	20.8	17.0	18.3	24.4	18.1	11.5	16.4	22.9	21.4	21.5
X = 47.5	26	18.4	17.0	17.3	18.2	21.5	11.8	16.1	23.6	20.8	22.7

activity and perceived character was observed, an examination of Tables 1 and 2 indicates support for this hypothesis on the other three variables. Significant and substantial linear correlations were observed, but the eta correlations were substantially and significantly higher. In general, the perceived competence, sociability, and composure of the source increased with increased vocal activity until vocal activity reached about 50 to 60 percent. At these relatively high levels of vocal activity the perceptions leveled out and then showed some decline at higher levels.

It was hypothesized that vocal activity level and perceived extroversion would form a positive, linear relationship. A high ($r=.80$) linear relationship was observed. Even though the eta correlation was found to be significantly higher than the linear correlation, an examination of the means in Table 2 indicates no meaningful nonlinearity. Therefore, this hypothesis was confirmed.

It was hypothesized that social, physical, and task attraction would form essentially positive, linear relationships with level of vocal activity, but that the relationships would become nonlinear at extremely high levels of vocal activity. An examination of Table 1 indicates that the expected linear relationships were significant but low. The eta correlations were somewhat higher. An examination of the means in Table 2 indicate the presence of the hypothesized relationship for social and task attraction. Both social and task attraction increased with increased vocal activity until vocal activity reached about 50 to 60 percent. After this point both social and task attraction began to decline as vocal activity increased. The hypothesized relationship for physical attraction was not present. Sources were seen to be less physically attractive at lower (0-15%) vocal activity levels than at higher levels, but no other meaningful pattern is apparent.

It was hypothesized that vocal activity level and perceived homophily on the attitude, background, and value dimensions would form nonlinear relationships with the highest level of perceived homophily occurring at or somewhat above the mean vocal activity level reported by the subjects. That mean level was 39.6 percent. Significant nonlinear relationships were observed on the attitude and value dimensions; however, an examination of the means reported in Table 2 indicates no support for the hypothesized relationships. On the attitude dimension lower homophily was perceived at low (0-15%) and High (75-95%) vocal activity levels than was perceived at more moderate levels. A similar, but less distinct, pattern appeared to be present on the value dimension. Although these results do not support the hypothesis, it was suspected that this analysis may not have provided the best test of the hypothesized relationship because the vocal activity of the subject was not taken into account. The *post hoc* analyses did employ this control and are reported below.

It was hypothesized that perceived power-influence would form a positive, linear relationship with vocal activity level. Although, as noted in Table 1, a significant linear relationship was observed, the eta correlation was substantially and significantly higher. An examination of the same in Table 2 indicates that the hypothesized relationship held until vocal activity exceeded 60 percent. After this point the means reflect an irregular decline. The hypothesis, therefore, is not confirmed.

Post Hoc Analyses

Results of the first series of *post hoc* analyses of variance indicated that the subject's own vocal activity level interacts with the stimulus source's vocal activity level in forming perceptions of sociability, composure, competence, attitude homophily, social attraction, and task attraction (see Table 3). An examination of the means reported in Table 4 indicates that, for subjects who report higher vocal activity levels than the level of the given stimulus object, perceptions become more positive on each variable as the vocal activity of the stimulus object increases. For subjects who report lower vocal activity levels than the level of the given stimulus object, however, the pattern is much different. While the pattern in this case is similar to that for subjects who report higher vocal activity levels on the sociability dimension, the pattern on the attitude dimension of homophily is the exact opposite; the lower the vocal activity level of the stimulus object, the more perceived attitude homophily there was reported. On the remaining variables (composure, competence, and social and task attraction) moderate vocal activity of the stimulus object resulted in more positive perceptions than either high or low vocal activity.

TABLE 3

F-RATIOS FOR INTERACTION OF SUBJECT VOCAL ACTIVITY AND STIMULUS VOCAL ACTIVITY: FIRST SERIES OF POST HOC ANALYSES

Dependent Variable	d.f.	F-Ratio	P
Credibility			
Sociability	2/489	5.44	<.01
Composure	2/489	4.30	<.05
Competence	2/489	3.67	<.05
Extroversion	2/489	2.06	NSD
Character	2/489	2.69	NSD
Power-Influence	2/489	2.62	NSD
Homophily			
Attitude	2/489	14.00	<.0001
Value	2/489	2.19	NSD
Background	2/489	1.54	NSD
Attraction			
Social	2/489	4.46	<.05
Physical	2/489	2.03	NSD
Task	2/489	3.30	<.05

TABLE 4

MEANS FOR INTERACTION OF RELATIVE SUBJECT VOCAL ACTIVITY AND STIMULUS VOCAL ACTIVITY

Relative Subject Vocal Activity	Stimulus Vocal Activity: Low		Moderate		High	
	Higher	Lower	Higher	Lower	Higher	Lower
Dependent Variable						
Sociability	13.1	17.6	17.9	19.9	22.1	20.8
Composure	12.9	16.8	16.3	19.4	19.7	18.4
Competence	14.6	17.0	16.9	18.6	19.8	18.3
Character	17.7	18.5	18.4	17.8	19.9	17.3
Power-Influence	13.9	15.5	16.4	17.1	17.9	16.9
Attitude	19.6	25.8	21.2	23.0	27.0	23.5
Social	21.1	24.5	25.0	25.6	27.0	23.5
Task	20.4	21.6	23.0	24.2	26.5	23.2

Main effects in the analyses that were not confounded by significant interactions indicated that subjects who reported higher vocal activity than their stimulus object rated the stimulus less extroverted than did subjects who reported lower vocal activity (Higher X=11.7, Lower X=22.8, F=58.12, $p<.0001$), that moderate and high vocal activity produced more perceived power-influence than low (Low X=14.1, Moderate X=16.8, High X=17.0, F=50.26, $p<.0001$), and that moderate and high vocal activity produced more perceived physical attraction than low vocal activity (Low X=19.8, Moderate X=21.5, High X=20.9, F=8.03, $p<.0001$).

Results of the second series of *post hoc* analyses also indicated a number of significant interactions between the subjects' vocal activity level and that of the stimulus source. Significant interactions were observed for sociability, composure, competence, extroversion, power-influence, attitude homophily, and social, physical, and task attraction (see Table 5). An examination of the means reported in Table 6 indicates several fairly clear patterns. Subjects who reported high vocal activity levels perceived the stimulus source with a low level less positively than the stimulus sources with a moderate level and the stimulus source with a high level as most positive of all. Subjects who reported moderate vocal activity levels also perceived the stimulus sources with low vocal actiivty as less positive than those with higher levels. However, these subjects did not indicate the same clear preference for the high vocal activity source over the moderate that the subjects with high vocal activity did. While high vocal activity sources were seen as more extroverted and as somewhat higher in sociability and power-influence, moderate sources were perceived as having more attitude homophily and as being more socially attractive. In general, low vocal activity subjects perceived moderate level sources more positively than either high or low level sources. This was true

on the sociability, composure, competence, power-influence, social attraction, physical attraction, and task attraction dimensions. However, high activity sources were seen as the most extroverted while low activity sources were seen as having the most attitude homophily. Thus, a clear preference for sources with high vocal activity was reported only by subjects who also have high vocal activity. For subjects with low or moderate activity there was a positive reaction to sources with moderate vocal activity that was not markedly enhanced (in fact was reduced in some cases) by a further increase in vocal activity.

TABLE 5

F-RATIOS FOR INTERACTION OF SUBJECT VOCAL ACTIVITY AND STIMULUS VOCAL ACTIVITY: SECOND SERIES OF POST HOC ANALYSES

Dependent Variable	d.f.	F-Ratio	P
Credibility			
Sociability	4/510	9.41	<.0001
Composure	4/510	7.04	<.0001
Competence	4/510	5.97	<.001
Extroversion	4/510	4.55	<.01
Character	4/510	<1	NSD
Power-Influence	4/510	3.57	<.01
Homophily			
Attitude	4/510	15.38	<.0001
Value	4/510	1.46	NSD
Background	4/510	1.51	NSD
Attraction			
Social	4/510	5.58	<.001
Physical	4/510	2.81	<.05
Task	4/510	5.17	<.001

TABLE 6

MEANS FOR INTERACTION OF SUBJECT VOCAL ACTIVITY AND STIMULUS VOCAL ACTIVITY

	Stimulus Vocal Activity								
	Low			Moderate			High		
Subjest Vocal Activity	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
Sociability	15.6	13.7	10.9	20.2	19.2	18.0	19.8	21.3	22.4
Composure	15.0	13.5	10.0	19.0	19.1	15.9	17.2	19.2	19.4
Competence	15.9	15.1	12.8	18.5	18.0	16.9	17.5	18.6	19.8
Extroversion	11.3	9.2	7.6	20.6	17.4	16.5	23.6	24.1	23.6
Attitude	24.1	18.4	18.0	22.6	23.7	20.7	18.8	21.7	26.0
Power-Influence	15.1	13.8	13.4	17.4	16.3	16.8	16.6	17.2	17.4
Social	23.1	21.0	19.7	25.8	25.3	25.2	22.3	23.7	26.5
Physical	20.7	19.2	19.7	21.9	21.6	20.8	20.3	21.2	21.3
Task	22.3	20.6	18.6	24.0	23.9	22.8	22.3	23.3	25.7

DISCUSSION

This study investigated possible relationships between an individual's vocal activity and the way that person is perceived in terms of credibility, attraction, homophily, and power-influence. On the basis of previous research involving vocal activity of a source and the perceptions of that source by other individuals, several relationships were hypothesized.

As hypothesized, perceived competence, sociability, and composure were found to increase with increased vocal activity until reaching moderately high levels of vocal activity (50-60% of the total time in a small group) and then level off and decline as vocal activity level continued to increase. Similar hypothesized relationships were observed for social and task attraction. Comparable relationships were hypothesized for character and physical attraction, but the hypotheses were not confirmed.

It was hypothesized that vocal activity level and perceived extroversion would form a positive, linear relationship. This hypothesis was confirmed. However, a similar hypothesized relationship between vocal activity level and perceived power-influence was not observed. Rather, it was found that the hypothesized relationship obtained only up to a moderately high level of vocal activity (60% of the total time in a small group) and after that perceived power-influence began an irregular decline as vocal activity level increased.

Hypothesized nonlinear relationships for perceived homophily disregarding the level of subject vocal activity levels were not obtained. However, when the level of subject vocal activity was taken into account in *post hoc* analyses, there was support for this hypothesis on the attitude homophily dimensions. The highest perceived homophily was recorded in the conditions where the stimulus and subject vocal activity levels were in the same category (high-high, moderate-moderate, or low-low).

When all of these results are considered together, it is possible to draw two general conclusions that are suggestive for the development of a theory about the role of vocal activity in the formation of perceptions of communicators in small group interaction. First, communicators are generally perceived in an increasingly positive manner as their vocal activity level increases up to a point of moderately high vocal activity (50-60% of the total time in the group). This conclusion carries two important implications. It is *possible* for a person to engage in too much vocal activity, and thus be perceived less positively than if he or she had engaged in less vocal activity. It is *probable*, however, that the optimal level is seldom exceeded in a real communication environment. If one person controls 60 percent of the time in a five-person group, that leaves only 10 percent on the average for each of the remaining group members. While such disproportionate vocal activity levels may actually occur in some groups, such an occurrence is certainly not normal, and

may be comparatively rare. Thus, the results of this study indicate that, in general, there is a positive, linear relationship between vocal activity and desirable perceptions of communicators in small group interaction.

The second major conclusion from this research is a qualification of the first. That is, while there appears to be a positive, linear relationship between vocal activity and credibility, attraction, and power-influence, this relationship does not hold for homophily, at least on the attitude dimension. People appear to perceive other communicators at most homophilous if their vocal activity level is similar to their own. Considerable research has indicated that homophily has a major impact on interpersonal communication, particularly interpersonal influence.[8] Consequently, this qualification may be very important to the specification of a rhetorically optimum level of vocal activity. From the present research the optimum vocal activity level for interpersonal influence would appear to be a point slightly above the vocal activity level of other communicators in a group. Such a level should provide a more positive perception of credibility, attraction, and power-influence than would a lower level, while at the same time providing a more positive perception of homophily than would a higher level.

[8] Everett M. Rogers and Floyd F. Shoemaker, *Communication of Innovations: A Cross Cultural Approach* (New York: Free Press, 1971).