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ABSTRACT

Fifty volunteer undergraduate students majoring in speech pathology and audiology at the University of North Dakota tested the following hypotheses: (1) leaders exhibit significantly more nonverbal cues than do nonleaders in task-oriented and informal small groups; (2) members of task-oriented small groups exhibit significantly more nonverbal cues than do members of informal small groups; and (3) leadership emergence and group type interact, as leaders in task-oriented groups exhibit significantly more nonverbal cues than do leaders of informal groups and nonleaders in either group type. The volunteers were randomly placed in 10 discussion groups consisting of five members each. Five of the groups were randomly designated as task-oriented, and five were designated as informal groups. With task-oriented and informal groups combined, the results indicated that perceived leadership correlated significantly with being perceived as informed, liked, and enjoying the discussion. Significant negative correlations were obtained between perceived leadership and being the least liked member of the group, the most disagreeable member, and the member who enjoyed the discussion the least. (SW)

A STUDY OF NONVERBAL COMMUNICATION AND LEADERSHIP EMERGENCE IN TASK-ORIENTED AND INFORMAL SMALL GROUP DISCUSSIONS

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Research in group communication increasingly has focused upon those behaviors related to leadership emergence and effectiveness. Crockett, for example, found that emergent leaders exhibited a significantly higher rate of participation than did non-leaders, and thus were rated by the other members as being needed by the group.[1] In another study of leadership emergence, Geier identified five communication traits which seemed to prevent one from emerging as leader.[2] Those traits included uninformedness, non-participation, extreme rigidity, authoritarian behavior, and offensive berbalization. Sargent and Miller, investigating behavioral differences between leaders preferring the autocratic style of leadership and those preferring the democratic, found that autocratic leaders' statements were more task-oriented, more concerned with achievement of their own preferred outcomes, and less favorably disposed to other members' participation than democratic leaders' statements.[3] Finally, Bostrom studied patterns of communication interaction in small groups and determined that individuals who confined their communicative activity to one or two other participants tended not to occupy a central position in the group.[4] Furthermore, he found that discussion members chosen as leaders by the other participants were significantly higher in individual sends, individual receives, group sends, and centrality.

While considerable attention has been devoted to the relationship between verbal behavior and leadership emergence, nonverbal cues in group interaction largely have been ignored.

However, studies focusing upon nonverbal communication in contexts other than small groups suggest that four categories of nonverbal behavior have significant impact during communicative encounters. Those four categories include facial expression, gesticulation, head movement, and postural shift.

The role of facial expression in interaction was investigated by Rosenfeld, who determined that smiles are exhibited more frequently when an individual is seeking the approval of other participants in the interaction.[5] Similarly, Mehrabian and Williams found that individuals seeking to persuade others showed an increase in facial activity.[6] Since leadership in small groups involves influence and hence persuasion, one would expect that individuals seeking leadership positions would exhibit more facial cues than would other members of the group.

Research relating to the second category of nonverbal cues, gesticulation, was conducted by Rosenfeld, who found gesticulations to be characteristic of approval-seeking and positively correlated with smiling.[7] Furthermore, Mehrabian and Williams found that an individual attempting to persuade will exhibit an increased rate of gesticulation, and that gestures indicating boredom elicit disapproval from the other interactants.[8]

The third nonverbal variable is the head movement made during the act of communication. Rosenfeld noted a significant positive correlation between smiles and positive head nods.[9] Dittman and Llewellyn noted that head nods are most likely to occur at points of interaction between speaker and listener; therefore, head nods have a regulatory function.[10] Mehrabian and Williams found more head nodding among individuals trying

to persuade, adding that disagreement is illustrated not only by words, but by a side-to-side shake of the head, perhaps combined with various facial expressions.[11]

Investigating the fourth nonverbal variable, postural shift, Ekman found that body position spontaneously displayed during an interview was not random activity, but that it had specific communicative value related to the verbal behavior.[12] Rosenfeld determined that certain body postures and postural shifts appeared to reveal discomfort and served approval-seeking functions.[13] Finally, the individual attempting to persuade was found by Mehrabian and Williams to exhibit a lower rate of postural shift.[14]

The correlations of facial expression, gesticulation, head movement, and postural shift with approval-seeking and attempts to persuade therefore suggest a relationship between these nonverbal behaviors and leadership emergence. However, since the types of behaviors producing leadership emergence interact with the nature of the group climate, the types of nonverbal behaviors associated with leadership in one situation may differ substantially from the behaviors exhibited by leaders in another type of group.[15] Hence, the following hypotheses were tested: (1) Leaders exhibit significantly more nonverbal cues than do nonleaders in task-oriented and informal small groups; (2) Members of task-oriented small groups exhibit significantly more nonverbal cues than do members of informal small groups; (3) Leadership emergence and group type interact, as leaders in task-oriented groups exhibit significantly more nonverbal cues than do leaders of informal groups and non-leaders in either group type.

Procedure

Subjects for the present study were fifty volunteer undergraduate students majoring in Speech Pathology and Audiology at the University of North Dakota. The volunteers were randomly placed into ten discussion groups consisting of five members each. Five of the groups were randomly designated task-oriented groups and given a specific question on which they were to reach consensus. The remaining groups were designated informal groups and told to discuss any topic they wished. After the groups had been allowed to meet for approximately one hour, the discussion was terminated and a questionnaire regarding roles of individuals within the group was administered.

Each discussion session was videotaped during predetermined intervals for later analysis. The videotapes were then shown to a group of ten trained observers who were asked to record the occurrences of eight types of nonverbal behaviors: head agreement, head disagreement, facial agreement, facial disagreement, eye contact, postural shift, gesticulation of the shoulder, arm, or wrist, and gesticulation of the fingers. Intercoder reliability was calculated, with an agreement index of .98 being obtained.

Pearson Product-Moment Correlation coefficients were calculated for the data obtained by the questionnaires to identify the emergent leaders and assess the relationship between leadership emergence and participants' ratings of other aspects of group participation. The observers' recordings of the nonverbal cues then were analyzed through two-by-two analyses of variance for each category of nonverbal behavior, with cues exhibited by leaders and non-leaders being considered within each type of

group.

Results and Discussion

The questionnaire distributed to the group participants after completion of the discussion session was analyzed through the Pearson Product-Moment Correlation method to assess the relationship between perceived leadership and other aspects of each individual's performance (Table 1). With task-oriented and informal groups combined, the results indicated that perceived leadership correlated significantly with being perceived as informed, liked, and enjoying the discussion. Significant negative correlations were obtained between perceived leadership and being the least liked member of the group, the most disagreeable member, and the member who enjoyed the discussion the least. These results tend to confirm Geier's findings that leaders are perceived as those individuals who most frequently assume leadership because of an interest in their fellow members, and those who do not participate in group activity and group interaction tend not to emerge as leaders. The only item on the questionnaire which was not highly correlated with perceived leadership concerned the member perceived as the most agreeable.

The data presented in Table 1 indicate some differences in the ratings obtained in task-oriented and informal groups. In the informal groups the best liked member had a high correlation with perceived leadership, while in the task-oriented groups the correlation between the perceived leader and the best liked member of the group was only moderately high. However, while a moderately high negative correlation existed between the perceived leader and the least liked member in the task-oriented groups, the correlation between these same variables in the in-

TABLE 1

PEARSON PRODUCT MOMENT CORRELATION COEFFICIENTS OF PERCEIVED LEADERSHIP IN RELATIONSHIP TO GROUP EVALUATIONS FOR TASK-ORIENTED AND INFORMAL GROUPS

QUESTION	COMBINED GROUPS		INFORMAL GROUPS		TASK-ORIENTED GROUPS	
	Cor. Coef.	Lev. of Signif.	Cor. Coef.	Lev. of Signif.	Cor. Coef.	Lev. of Signif.
1. Who was the most informed member?	.6749	.001[a]	.8696	.001[a]	.5133	.009[a]
2. Who was the best liked member?	.6601	.001[a]	.8645	.001[a]	.4625	.020[b]
3. Who was the least liked member?	-.3114	.028[b]	-.1865	.372	-.4256	.034[c]
7. Who was the most agreeable member?	.1384	.338	.4454	.026[b]	-.0248	.907
8. Who was the most disagreeable member?	-.3114	.028[b]	-.2798	.176	-.3423	.094
9. Who was the member who enjoyed the discussion most?	.6520	.001[a]	.8548	.001[a]	.4216	.036[c]
10. Who was the member who enjoyed the discussion least?	-.3438	.014[b]	-.4196	.037[c]	-.2843	.168

[a] $p \leq .01$

[b] $p \leq .03$

[c] $p \leq .04$

formal groups was negligible. Furthermore, in the informal groups the correlation between the perceived leader and the most agreeable member was moderately high, but in the task-oriented groups the correlation between these variables was inconsequential. Finally, the correlation of the perceived leader and the member who enjoyed the discussion the most was high in the informal groups but moderate in task-oriented discussions. Conversely, the correlation of the perceived leader and the member who enjoyed the discussion the least was moderately high in the informal groups but negligible in the task-oriented conditions. Thus some indication is provided that the behaviors associated with leadership emergence in informal groups differs from the behaviors of emergent leaders in task-oriented groups.

Analyses of variance were conducted for each of the eight types of nonverbal behaviors to test the research hypotheses. Hypothesis 1, that leaders exhibit significantly more nonverbal cues than do non-leaders in task-oriented and informal small groups, was supported in only one instance, as leaders showed significantly more head agreement (Table 2). This result is consistent with the findings obtained by Rosenfeld and Mehrabian and Williams. Apparently one device effectively used by emerging leaders to persuade the other members and obtain their approval is nodding the head positively. However, this finding is not consistent with subjects' ratings of perceived leadership and agreeableness, for no appreciable correlation was found between those two variables. Thus positive head nods may indicate something other than agreement, such as interest, comprehension, and so on.

TABLE 2

ANALYSIS OF VARIANCE--HEAD AGREEMENT

Source of variance	df	SS	MS	F
Leadership	1	109.52	109.52	4.07*
Type of group	1	13.52	13.52	.50
Interaction	1	151.38	151.38	5.63*
Within	46	1236.70	26.89	
Total	49	1511.12		

*p < .05

TABLE 3

ANALYSIS OF VARIANCE--

GESTICULATION OF SHOULDER, ARM, WRIST

Source of variance	df	SS	MS	F
Leadership	1	105.13	105.13	2.10
Type of group	1	43.25	43.25	.86
Interaction	1	202.01	202.01	4.03*
Within	46	2307.25	50.16	
Total	49	2657.63		

*p < .05

Hypothesis 2, that members of task-oriented small groups exhibit significantly more nonverbal cues than do members of informal groups also was supported in one instance. Task-oriented group members exhibited significantly more face disagreement than did participants in informal groups (Table 4). Apparently involvement in a task allows more overt expression of disagreement, while a purly social situation inhibits such expression. However, the failure to obtain significant differences on the variable of head disagreement suggests that some moderation in this conclusion is necessary. It may be that, w while the task-oriented participants felt free to exhibit mild expressions of disagreement, the participants' unfamiliarity with each other prevented them from disagreeing more actively. Perhaps future research will lend some insight into this issue.

The third hypothesis, which posited an interaction effect between leadership and group type, was found to be true in two of the eight nonverbal categories. As Tables 2 and 3 indicate, interaction effects were found to be significant for head agreement and gesticulation of the shoulder, arm, and wrist. Examination of the mean frequencies of head agreement reveals that leaders in task-oriented group discussions exhibited this behavior with more than twice the frequency of any other group (Table 5). Similarly, Table 6 illustrates that task-oriented group leaders gesticulated with their shoulders, arms, and wrists more than twice as often as any other group. Both these findings suggest that the types of nonverbal behaviors associated with leadership emergence vary with the characteristics of the situation. In groups facing a specific task, leaders often emerge by persuading the other participants to accept their

TABLE 4

ANALYSIS OF VARIANCE--FACE DISAGREEMENT

Source of variance	df	SS	MS	F
Leadership	1	3.13	3.13	1.36
Type of group	1	24.50	24.50	10.66*
Interaction	1	3.13	3.13	1.36
Within	46	105.75	2.30	
Total	49	136.50		

*$p < .05$

TABLE 5

MEAN FREQUENCIES OF HEAD AGREEMENT

	Informal Groups	Task-Oriented Groups
Leaders	4.70 (N=5)	12.70 (N=5)
Non-leaders	5.35 (N=20)	4.65 (N=20)

TABLE 6

MEAN FREQUENCIES OF GESTICULATION OF SHOULDER, ARM, WRIST

	Informal Groups	Task-Oriented Groups
Leaders	6.80 (N=5)	16.70 (N=5)
Non-leaders	8.20 (N=20)	8.05 (N=20)

points of view. Since, as was noted earlier, high frequencies of head movement and gesticulation are correlated with attempts at persuasion, the findings of the present study seem a reflection of the emergent leaders' persuasive efforts. On the other hand, leadership emergence in purely social groups would seem not to involve persuasion, which may explain the relatively lower frequencies of nonverbal behavior exhibited by leaders in informal groups.

In summary, certain patterns of nonverbal behavior seem to characterize leadership emergence in task-oriented and informal small group discussions, as leaders in both group types exhibit significantly more instances of head agreement than do nonleaders, and leaders in task-oriented groups gesticulate significantly more often with shoulders, arms, and wrists than do leaders in informal groups and nonleaders in either group type. Further research in needed, however, to identify the specific functions played by each type of nonverbal behavior. For example, while significant results were obtained for the variable "head agreement" in the present study, the subjects' ratings of each members' agreeableness suggest that positive head nods may serve other functions than simple expressions of agreement, and that those functions contribute to leadership emergence. Hence future studies should focus on both the verbal and nonverbal messages to better determine the meanings each type of behavior conveys. In addition, studies of nonverbal behavior in groups may wish to measure eye contact in terms of its duration rather than its frequency. In the present study, subjects were instructed to count each instance of the eyes of one participant meeting those of another. However,

while two members of the group staring into each other's eyes obviously would be an instance of high eye contact, the method of measurement used here would count it only as one occurrence of this behavior. Perhaps different results would have been obtained had eye contact been measured differently. Finally, research is needed to explore the relationship between nonverbal cues and leadership maintenance to determine whether the same behaviors promoting leadership emergence also serve to help the leader maintain his position. Investigations of this nature should provide some insight into the previously-neglected relationship between nonverbal communication and group leadership.

FOOTNOTES

[1]Walter H. Crockett, "Emergent Leadership in Small, Decision-Making Groups," Journal of Abnormal and Social Psychology, 51 (1955), 378-383.

[2]John G. Geier, "A Trait Approach to the Study of Leadership in Small Groups," Journal of Communication, 17 (1967), 316-322.

[3]James F. Sargent and Gerald R. Miller, "Some Differences in the Communication Behaviors of Autocratic and Democratic Group Leaders." (Paper presented at the Speech Association of America Convention, December 28, 1969, New York.)

[4]Robert N. Bostrom, "Patterns of Communicative Interaction in Small Groups," Speech Monographs, 37 (1970), 257-263.

[5]Howard Rosenfeld, "Instrumental Affiliative Functions of Facial and Gestural Expressions," Journal of Personality and Social Psychology, 4 (1966), 65-72.

[6]Albert Mehrabian and M. Williams, "Nonverbal Concomitants of Perceived and Intended Persuasiveness," Journal of Personality and Social Psychology, 13 (1969), 37-58.

[7]Rosenfeld.

[8]Mehrabian and Williams.

[9]Rosenfeld.

[10]A. Dittman and L. G. Llewellyn, "Relationship Between Vocalization and Head Nods as Listener Response," Journal of Personality and Social Psychology, 9 (1968), 79-84.

[11]Mehrabian and Williams.

[12]Paul Ekman, "Body Position, Facial Expression, and Verbal Behavior During Interviews," Journal of Abnormal and Social Psychology, 48 (1964), 295-301.

[13]Rosenfeld.

[14]Mehrabian and Williams.

[15]See, for example, Fred E. Fiedler, "A Contingency Model of Leadership Effectiveness," in Advances in Experimental Social Psychology, ed. by L. Berkowitz (New York: Academic Press, 1964), 79-98.