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ABSTRACT

A study examined the role played by gender and communication content in the leadership emergence process in small, task-oriented groups. Six hours of transcribed group interaction from a sample of the group deliberations of 6 mixed-sex groups of college students (n=27) engaged in a 4-month-long decision-making project served as the database for the analysis. A simple regression analysis identified task-relevant communication as being the sole significant predictor of emerged leadership. Production of task-relevant communication explained over 48% of the variance in emerged leadership. Subsequent analysis revealed that no significant gender differences existed in the production of task-relevant communication. Implications of this research, as well as a discussion of future directions for research, are presented. (One table of data is included; 21 references are attached.) (Author/RS)

Effects of Gender and Communication Content on Leadership Emergence in Small Task-Oriented Groups

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RUNNING HEAD: GENDER, COMMUNICATION CONTENT AND LEADERSHIP

Abstract

This investigation examined the role played by gender and communication content in the leadership emergence process in small, task-oriented groups. Six hours of transcribed group interaction from a sample of the group deliberations of six mixed-sex groups engaged in a four month long decision-making project served as the data base for the analysis. A simple regression analysis identified task-relevant communication as being the sole significant predictor of emerged leadership. Production of task-relevant communication explained over 48 percent of the variance in emerged leadership. Subsequent analysis revealed that no significant gender differences existed in the production of task-relevant communication. Implications of this research, as well as a discussion of future directions for research, are presented.

Effects of Gender and Communication Content

on Leadership Emergence in Small Task-Oriented Groups

The study of leadership has occupied researchers from various disciplines for decades. Communication scholars have likewise focused attention on the study of communication processes involved in the leadership process. In recent years, gender has emerged as an important factor in our understanding of leadership. As Baird (1976) states, "With the emergence of the women's movement, researchers have shown an increased interest in studying differences between the behaviors of males and females" (p 179), including the leadership behaviors of males and females. The reported investigation addresses this important issue in small group communication research, i.e., does gender affect leadership emergence in small groups?

Baird (1976), in his review of literature relevant to gender differences in group communication, concluded that males are more likely to emerge as group leaders due to their tendency toward aggressiveness, activity, and dominance. Specifically, males were believed to be more influential, more ascendent and more sociable than females in small group settings. Males appeared to initiate more verbal acts and more suggestions, to defend their positions more forcefully and to yield less readily to interruption than their female counterparts.

More recent studies of gender differences in leadership behavior in small groups do not present quite so clear a picture as that offered by Baird (1976). For example, Bradley (1980)

manipulated group members' perceptions of the task competence of experimental confederates such that the confederate either demonstrated, or did not demonstrate, a high level of task-related ability. Groups consisted of either a male or female confederate and four male subjects. A sample of communication directed toward the confederates during the group discussion was content analyzed. Results indicated that highly competent females received fewer dominance messages and fewer hostile messages than less competent females. In addition, highly competent females received more reasonable messages and were perceived to exercise more influence over others than the less competent females. However, the females were less well liked than their male counterparts, regardless of competence. Bradley concluded that internal status gained through exhibitions of expertise could enable females to be influential in small group discussions, although they might not be well liked by their fellow group members.

Alderton and Jurma (1980) investigated the relationship between leader gender, communication content and group member satisfaction with the group leader. Four types of triads were created as follows: male leader, male followers; male leader, female followers, female leader, female followers; and female leader, male followers. The role of the designated leader was to explain the task requirements to the group, as well as to record the group's decisions and to administer the final group satisfaction measure. The designated leader's communication was content

analyzed into one of three task-oriented/instrumental or one of two social-emotional-oriented/expressive behaviors. Results indicated that female leaders agreed more with both male and female followers than did their male counterparts, perhaps suggesting concern by the female leaders for the social-emotional dimension. In addition, both female and male followers disagreed more with a female leader than with a male leader. These results may suggest a challenging of the female leaders that was not present for the male leaders. Further results indicated that male and female leaders did not differ in amount of task-oriented communication, and that group members seemed to be equally satisfied with either male or female leaders, as long as their communication could be characterized as task-oriented.

Spillman, Spillman and Reinking (1981) hypothesized that while males and females would be rated as engaging in sex-role stereotyped behaviors initially, i.e., males would be perceived as task-oriented and females as socially-oriented, this difference would decrease over time. The mixed-sex groups met a number of times during the course of the semester on a decision-making task. Results indicated that females were rated by their peers as being higher in both task and social leadership at times one and two than their male counterparts. However, these differences disappeared at times three and four. Spillman and her associates suggested that some female leaders' high scores for masculinity and autocratic behavior might have skewed the results of the

investigation in that typical female leaders might not be perceived to be as task-oriented as those in the reported study.

Bunyi and Andrews (1985), in a design reminiscent of Bradley (1980), trained male and female confederates such that they either evidenced a high level of task-oriented behavior, or received minimal training in task-oriented leadership behavior. Subjects completed a short decision-making task in triads consisting of either a male or female confederate (who was either skilled or non-skilled) and two naive participants (of the same or opposite sex). Subjects rated group members on the degree to which each evidenced three aspects of task-oriented behavior, as well as on three ratings of emerged group leadership. Although Bunyi and Andrews argue for a relationship between task-orientation and leadership, regardless of gender, this conclusion must be considered tentative, given the subjects' apparent inability to distinguish between those who were trained in task-oriented leadership and those who were not in terms of the alleged content of their communication. However, evidence does seem to exist to support the conclusion that gender composition of the group did affect leadership ratings in that the gender of the emerged group leader seemed to reflect the gender of the majority of group members.

Winther and Green (1987) content analyzed the communication content of both males and females as they gave instructions to a male or female subject regarding a card-sorting task. Results indicated that males were more verbose than females in giving

instructions to subjects. Winther and Green concluded from this finding that female "leaders" were less self-assured than their male counterparts. Further, males used more social leadership language than did females. However, this result must be regarded with caution, as the factor structure and reliability of the social leadership language scale appeared to be less than solid. Finally, no gender differences were found in task-oriented leadership language.

Owen (1986) approached the study of gender and leadership from a slightly different angle, investigating rhetorical themes evidenced by female leaders of small groups. Three mixed-sex groups met a number of times during the course of the semester on a decision-making task. Group members' journals and final evaluations of their group process served as the data base for the rhetorical analysis. There was no measure of emerged leadership, per se. Rather, the identity of the group leaders was deduced from the written material and from observations of the groups' interactions. Owen identified two dominant themes: a) focus on hard work and task-orientation, and b) attempts to shed/avoid the "leader" label. In the first instance, the three emerged female leaders described taking over the group leadership when it appeared that no other group member was going to assume that responsibility, working extremely hard to keep the group moving along toward its goal. This "hard work" took the form of organizing others' actions, note-taking, etc. In the second instance, the female leaders worked to avoid the "leader" label, fearing

that others would perceive them as "bitchy" or as "slave drivers." Owen concluded that the female leaders faced a paradox, in that they felt compelled to assume a leadership role to insure group success, but tried to avoid the leadership label for fear of alienating fellow group members. In many respects, Owen's (1986) results mirror those found by Bormann, Pratt and Putnam (1978) in their earlier study of gender and leadership.

Taken as a group, these recent studies suggest that, for the most part, females who engage in task-oriented behavior and/or who evidence task-relevant expertise or ability may indeed emerge as group leaders. However, females who emerge in a leadership role appear to do so only reluctantly, and often suffer negative interpersonal attributions for their efforts.

Before placing too much faith in the above conclusions, however, two assumptions implicit in this research must be challenged. It appears from the reported research that investigators have studied actual communication in actual small groups. The reality is something quite different. None of these investigations met both criteria, i.e., none studied actual communication from an actual small group experience. In the first case, in order to draw firm conclusions about communication behavior, it makes sense that one should focus on actual communication behavior, not ratings of communication behavior from the self or others. Cragan and Wright (1990) allude to this in their review of small group communication research in the 1980's. Bradley's (1980) research utilized a sample of followers' communication,

not leaders' communication. Both Spillman, et al. (1981) and Bunyi and Andrews (1985) focused on ratings of communication content, not on communication content, per se. Owen (1986) primarily used written self-reports. Clearly, it is difficult to draw firm conclusions about the content of leadership communiction from these studies.

In the second case, in order to draw firm conclusions about communication behavior in small groups, it makes sense that one must at least approximate a "real world" small group experience. Poole (1983), echoing Bormann (1970) and others, argues that in order for a group experience to approximate a "full fledged group," four conditions must be met:

> "a) the group must not be zero-history; b) the task must not be overly routine or an "open and shut case"; c) there must be some pressure or incentive for the group to finish its task; and d) there must be some incentive for members to maintain solidarity and remain in the group." (p. 333).

Cragan and Wright (1990) concur with the need to utilize more realistic groups in small group communication research. Of the six studies reported here, only two (Owen, 1986; Spillman, Spillman & Reinking, 1981) approach Poole's (1983) definition of a full-fledged group. In fact, Winther and Green's (1987) manipulation appears to approximate an instructor/student dyadic interaction far more than it does leadership in a small group.

A final note regards the issue of emerged leadership. If one is to draw firm conclusions about emerged leadership in small groups, one must present evidence that a leader has, indeed, emerged. Three of the reported studies cannot make such a claim. In the case of Winther and Green (1987), the "leader" was assigned by the investigators. Alderton and Jurma (1980) assigned the leaders in their study. Owen (1986) deduced the identity of the leaders from individuals' journals and final papers, coupled with his own observations. In the first two cases, one must question the generalizability of conclusions regarding assigned leaders to cases involving emerged leaders. In the final case, researchers should use caution in accepting relatively unsubstantiated deductions as to whom truly emerged as leaders in the three groups studied. Some more objective rating by the group members themselves would certainly have bolstered Owen's (1986) conclusions as to the identities of the emerged group leaders.

It seems clear that caution must be used in accepting conclusions drawn from the reported research. Rather, research should be undertaken that focuses on true leadership communication from true small task-oriented groups. The investigation reported in the following sections is just such research. This is so for three reasons: a) the data utilized is a large representative sample of actual communication, b) the data includes intragroup measures of emerged leadership, and c) the small group experience meets all four conditions for a "full fledged group,"

as described by Poole (1983). The following research question is posed:

RQ1: Does communication content predict emerged leadership?

RQ1a: If such content areas can be identified, are there gender differences in production in these critical content areas?

METHODS

Respondents

Six mixed-sex groups of four to five members each were formed from a small group communication course at a large Southwestern university. A total of twenty-seven respondents took part in the research, fourteen male (52 percent) and thirteen female (48 percent). The group task was to produce a term paper addressing a question of either policy or value. The paper grade accounted for 30 percent of the final grade in the class. Part of each student's final project grade depended on intragroup evaluations assessing the quality and quantity of fellow group members' participation in the group project. The groups met a number of times during the course of the semester, both in class and on their own. Given these parameters, it appears that this group experience meets all four criteria for a "full fledged group". That is, the group was not zero-history; the task was not overly routine or an "open and shut case"; there was some pressure or incentive for the group to finish its task; and there was some incentive for members to maintain solidarity and remain in the group.

Groups met twice outside of class for the purposes of data collection, once early in the semester and once close to the end of the semester. Groups met to discuss their ongoing group projects in a conference room around a square table with six available chairs. Video cameras were set up in two corners of the room to record the group interactions. Although group members expressed some nervousness and a sense of conspicuousness at the outset of the first taping session, it appeared that after a few minutes, the presence of the cameras was ignored. Group members took part in the taping sessions as part of their participation grade in the class. Students had the option of completing a library assignment instead of participating in the research project if they so chose. No student opted out of the research project.

Approximately 30 minutes of group interaction was recorded from each of the six groups at two different times (as noted above). This resulted in a total of six hours of small group interaction. The tapes were transcribed and member contributions divided into thought units, or verbal acts which, when considered in context, "can be taken as a single simple sentence expressing or conveying a complete thought or idea" (Hirokawa, 1988, p. 233). These thought units were coded using a variation of Hirokawa's (1983) interaction coding scheme for small group interactions. Hirokawa (1983) lists seven functions of small group interaction, five task-relevant and two related to socioemotional

issues. Any thought unit that was related to task (e.g., analyze group problem, establish evaluation criteria, generate alternative solutions, evaluate alternative solutions, or establish operating procedures) was coded as task-relevant communication. Any thought unit that was related to socioemotional issues (e.g., positive socioemotional, negative socioemotional) was coded as social-relevant communication.

Two additional categories were added to achieve exhaustiveness in the coding scheme: back-channel communication and task-irrelevant communication. Back-channel communication is described in Duncan (1972), and consists mainly of brief statements of support and encouraging vocalizations (e.g., "yes", "mmhm", "go on"). Task-irrelevant communication was defined as a thought unit that was not back-channel communication, and was not primarily relevant to either socioemotional issues or directly to the task at hand. Winther and Green (1987) included such a category in their coding scheme. Otherwise, task-irrelevant communication, per se, has been largely ignored in small group interaction coding schemes, although it has been linked to perceptions of intragroup attraction (Hawkins & Stewart, 1991).

Three independent coders analyzed the transcribed group interactions. The coders achieved an acceptably high rate of agreement in their assessments. Pearson's r ranged from a low of .79 to a high of .86 (all were significant at $p<.001$). The results of the coding revealed that the most thought units fell into the task-relevant category (N=3939), followed by task-

irrelevant communication (N=864), back-channel communication (N=741) and social-relevant communication (N=219).

Emerged leadership was assessed using a scale designed by the author (see Appendix for a copy of the instrument, along with instructions for its use). Respondents were asked to complete the leadership measure five times during the course of the semester, so scale brevity was an important concern. In addition, as Spillman, Spillman and Reinking (1981) observe, the abilities to capture the hierarchy of leadership and to measure leadership development over time are true advantages in assessing emerged leadership. The leadership instrument used in the reported research offers both advantages.

In order to assess emerged leadership, respondents were presented with a leadership continuum and asked to indicate the positions of themselves and of their fellow group members on a five-point scale (1=has not emerged as a group leader at all, to 5=has emerged as a group leader to a great extent). Interval level data was obtained by instructing respondents to rate their fellow group members according to the scale values given, NOT to rank them vis-a-vis one another.

Although it was not possible to determine the reliability of the leadership scale in a conventional sense, intragroup consistency in rating emerged leadership could be measured by determining the frequency with which each individual was given the highest mean rating in the group for the emerged leadership measure over time. Each person should be rated the emerged leader one of

five times, or 20 percent of the time, by chance alone. If a person achieved the highest mean in the group on the measure three or more times, the proportion (60 percent) would be significantly greater that that obtained by chance alone ($z=2.23$, $p<.05$). In fact, all of the groups identified one group member as highest in emerged leadership at least 60 percent of the time, demonstrating the stability of the group consensus as to the identity of the emerged leader. It appears that the emerged leadership measure used in the reported research evidences a defensible level of reliability (Hawkins & Stewart, 1990, 1991).

Regression analysis is the appropriate analysis in this case, as an attempt is being made to predict a single metric dependent variable (emerged leadership) from a set of metric independent variables (the four categories of communication content). However, before proceeding with the regression analysis, it was necessary to assess the collinearity of the four independent variables. As Hair, Anderson, Tatham and Grablowsky (1979) point out, no predictor variable should be included in a regression analysis that is more closely related to the best predictor than it is to the independent variable. In order to assess the extent of collinearity of the predictor variables, a simple correlation analysis was done. The results are presented in Table 1.

TABLE 1 ABOUT HERE

As can be seen, only two of the potential predictor variables passed the test of independence required by regression

analysis, task-relevant communication and task-irrelevant communication. The other two content categories, social-relevant communication and back-channel communication, do not appear to be related to the dependent variable, nor do they account for much of the coded communication (16.7 percent). It seemed defensible, then, to proceed with a simple regression analysis using only two of the initial predictor variables, task-relevant communication and task-irrelevant communication (accounting for 83.3 percent of total coded communication).

RESULTS

The results of the regression analysis revealed a significant solution to the equation (F=11.36, p<.001). Task-relevant communication emerged as the sole significant predictor of emerged leadership (t=4.073, p<.001). Task-irrelevant communication did not appear to be a valuable predictor of emerged leadership (t=1.31, p=.203). As the constant was significantly different from zero (t=11.137, p<.001), the equation for the prediction of emerged leadership appears as follows: EL = 2.47 + .618 X, where "EL" represents emerged leadership, and "X" represents task-relevant communication. R square indicated that the predictor variable accounted for 48.6 percent of the variance in emerged leadership. In other words, in answer to the first research question, does communication content predict emerged leadership, the answer is strongly in the affirmative. Production of task-relevant communication is a very powerful predictor of intragroup assessments of emerged leadership.

The follow-up question to the initial research question asked, if communication content can predict emerged leadership, are there gender differences in production in these critical content areas? To answer this question, a simple analysis of variance was done, with one dependent variable (production of task-relevant communication) and one independent variable (gender). Although mean numbers of task-relevant thought units showed a trend for males to engage in more task-relevant communiction than females (M=170.9 versus M=115.8), results of the ANOVA indicated that no significant gender differences existed in production of task-relevant communication ($F=2.07$, $p=.163$). Power for this analysis was modest (.54), given the relatively small size of the respondent pool (Cohen, 1977).

Some may question why gender differences were only addressed after the regression analysis was completed. The answer lies in the issue of Type I error. The respondent pool was too small to accomplish a multivariate analysis of variance. Had four separate analyses of variance been done, Type I error (the risk of rejecting a true null hypothesis) would have been escalated. Type I error was minimized by only testing gender differences for the communication content category that best predicted emerged leadership, task-relevant communication. We can now be fairly certain that no gender differences exist in the type of communication that best predicts emerged leadership in small task-oriented groups.

DISCUSSION

Results of the reported research indicate that while communication content does affect the emerged leadership process, there appear to be no significant gender differences in production of communication in the critical content area, task-relevant communication. Conclusions are based on a large representative sample of actual small group interaction from a group experience that meets the four criteria for a "full fledged group", as described by Poole (1983) and others. Due to the careful construction of the investigation, one can be reasonably confident of the results, unlike previous work in this area, which has been hampered by lack of either a focus on actual interaction, or lack of realism in the group experience, or both.

There are several important implications of this research, three of which will be addressed here in detail. First, it is an old standard in small group instruction that groups must meet two requirements in order to function effectively: task maintenance and social maintenance (Bales, 1950; Barnlund & Haiman, 1960). If that is true, it follows that those who engage in behavior that enables the group to function effectively in both the task and social domains would be recognized as leaders. Although such a conclusion is intuitively attractive, the data do not seem to support it. The results of this investigation suggest that only task-relevant communication is related to perceptions of emerged leadership, regardless of the sex of the candidate for leadership. Although not addressing the role of leader sex in the

process, Schultz's (1978, 1986) work on communication and leadership supports the close relationship between task-relevant communication and emerged leadership.

A related point concerns the proportion of interaction time spent during the group deliberations in the various communication content areas. The most striking comparison is that between task-relevant communication and social-relevant communication. Coders identified 3939 thought units of task-relevant communication versus only 219 thought units of social-relevant communication. Task-relevant communication comprised 68.3 percent of the total coded communication, versus only 3.8 percent for social-relevant communication. In short, there was 18 times more task-relevant talk than social-relevant talk in the six hours of coded interactions. Given the disproportionately small amount of social-relevant talk, does this imply that social maintenance has been abandoned by the six groups represented in this study?

A closer look at another content category suggests that the answer to that question is in the negative. Task-irrelevant communication (N=864 thought units) represented 15 percent of total coded interaction. Task-irrelevant communication was defined as a turn at talk (which distinguishes it from back-channel communication, which is not) that is not primarily social maintenance oriented, but neither is it directly related to the task at hand. In reality, task-irrelevant talk was mainly comprised of chit-chat and small talk, e.g., activities planned for the weekend, assignments in other classes, identities of those

embroiled in ongoing intimate relationships, etc. Task-irrelevant communication may serve an important social maintenance function in that it implies shared interests, concerns for one another's lives outside of the group, and so on. Small group researchers may be missing an important aspect of group interaction if they exclude task-irrelevant communication from their analyses. As mentioned earlier, task-irrelevant communication has been largely ignored by small group researchers, other than to note its dysfunctional effects (e.g., Gouran, 1982). Clearly, additional research in this area is called for.

A final note concerns the lack of gender differences evident in the relationship between communication content and emerged leadership. It seems clear that engaging in task-relevant communication is the key to playing a leadership role in small task-oriented group interaction. The results of this investigation reveal that female group members are equally capable of engaging in task-relevant communication as are the males. Evidently, task-oriented females can be predicted to emerge as group leaders in the same proportions as task-oriented males.

This is not to say that females can expect the same experience as males in the leadership role. Earlier work by Bormann, Pratt, and Putnam (1978), as well as more recent work by Owen (1986), suggest that females assume leadership roles only reluctantly, and are fearful of group reaction when they do engage in task-oriented behaviors. They may have good reason to fear negative reaction, as Bradley (1980) found that task-oriented

females, although recognized as effective, were not particularly well liked by their peers. Female members of small task-oriented groups may still have a long way to go in their quest for leadership. Future research in this area would aid in the understanding of the leadership experience for female members of small task-oriented groups.

Every investigation has its weak points, and this one is no exception. Two limitations are clear. First, the respondents (nearly all college-aged undergraduates) represented a segment of the population that is younger, less conservative and better educated than the population at large. These demographic characteristics affect their behavior, as well as their perceptions of others' behavior. Therefore, caution must be exercised when generalizing beyond the sampled population.

Second, although the sample of interaction was quite large, nearly 6000 thought units from six hours of interaction, the size of the respondent pool was small (N=27). For this reason, the power available in the analysis of variance was modest. Future research of a similar design, but involving larger numbers of subjects, would help to support conclusions made about gender differences in small group communication.

In spite of its inherent limitations, the results of this investigation provide valuable insight into the emerged leadership process in small task-oriented groups. Additional research

in this area, especially as it regards task-irrelevant communication, and the response of group members to female leaders, is indicated.

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Table 1

Matrix of correlation coefficients

	FREQ1	FREQ2	FREQ3	FREQ4	MELSHIP
FREQ1	1.0000	.3956*	.4012*	.2647	.6705**
FREQ2		1.0000	.5103**	-.0378	-.0742
FREQ3			1.0000	.1338	.0882
FREQ4				1.0000	.3623
MELSHIP					1.0000

*p<.05

**p<.01

FREQ1=frequency of task-relevant communication

FREQ2=frequency of social-relevant communication

FREQ3=frequency of back-channel communication

FREQ4=frequncy of task-irrelevant communication

MELSHIP=mean emerged leadership (computed over times 1 through 5)