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Some Effects of the Interaction between the Leader and Members' Personal Dimensions on Group Satisfaction and Performance in Problem-Solving Groups

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Some Effects of the Interaction between the Leader and Members' Personal Dimensions on Group Satisfaction and Performance in Problem-Solving Groups

by Bernard Chu, S.J.

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LIFE

Bernard Chu Mong-chuan was born in Peiping, now Peking, China, April 17, 1925. Two years later his family moved to Shanghai where he spent the next twenty-two years. He graduated from St. Ignatius High School in June, 1944. In the same year, he was received into the Catholic Church. He completed pre-medical studies before joining the Society of Jesus. At the advent of the communists he left for the Philippines in order to pursue priestly training. He was ordained a Catholic Priest on March 18, 1960, with the degrees of Bachelor of Philosophy and Licentiate of Sacred Theology.

In between his formation years, he had two years of teaching experience. After his ordination, he served at Taiwan National University as Catholic Students' Chaplain for a year, 1962-1963.

He entered Loyola University in 1963 and obtained a Master's degree in education the following year. Then he continued graduate studies in psychology in the same university.

In pursuit of the priestly formation, he had travelled extensively in the Far East. In the future, counseling and teaching will be his main occupation.

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The present thesis deals with leadership in small group situations. It is of interest to view the evolution of small group researches in general and leadership researches in particular in their historical context.

Scientific studies of small groups began in the waning years of the nineteenth century. After a short and unrewarding investigation of natural groups, researchers started to withdraw into the laboratory. Initially, the concern was with developing rigorous methodologies, and with studying delimited aspects of man's social behavior. A return to real-world problems marked the 1930's when small group experts emerged out of the laboratory and applied the previously developed methodology in concrete situations. The Hawthorne Western Electric studies by Roethlisberger and Dickson (1939) was typical example. McGrath (1966) characterized the small group research of this period as a marriage of theoretically based ideas, real-world problems and experimental methodology which had not occurred before.

With the coming of World War II, research expanded on two fronts: a continuous methodoligical development, and the accumulation of empirical knowledge in several areas, the most noteworthy being leadership. Intermittent attempts at theoretical integration of certain restricted areas were made during the post World War II period; for example, by Festinger on pressures within small groups (1950) and by

Petrullo and Bass on leadership (1961).

In more recent years, theoretical interpretation and synthesis based on obtained data of broader dimensions were given serious consideration and sustained effort. Fiedler's (1964) model on leadership effectiveness and McGrath's (1966) classification of small group variables are unmistakably representatives of our time.

A cursory review of the literature on leadership in small groups would readily reveal that three factors stand out in relief; namely leader's personal attitude, leader-member relations, and group performance. These factors may be vested in a variety of terms, but basically they are quite alike, and they form the core of leadership research. Expressed in Carter's (1954) terms, they became individual prominence and achievement, aiding attainment by the group and sociability. In Borgatta, Couch and Bales' (1954) terms, the same factors became task ability, individual assertiveness and social acceptability. In Fiedler's (1958, 1964) terms, they became personal attitude, leader-member relations and group performance.

By emphasizing one or the other element, various schools express their preference and bias. The school of the great-man theory focuses its attention on the personal and genetic traits of a leader and tries to define the effectiveness of group performance by its leader's uncommon qualities, such as

intelligence, initiative, self-confidence, etc. Galton was one of its proponents. The situational theory capitalizes the importance of working conditions, historical milieu and favorable climate, so much so that no true leader would emerge in spite of the adverse environment. Watson seemed in favor of the theory. The interactional school stresses either the "romantic" variables of personal-social factors, and/or the job-related characteristics of the leaders and of the members. Most of the social scientists seem to favor the latter view. As Gibb (1947) pointed out that leadership is not only a function of the social situation and a function of personality, but it is a function of these two in interaction.

In other words, effective leaders are sensitive to the changing conditions of their groups and flexible in adapting their behavior to new requirements. They do not act apart from the group but always act as a part of the group.

There appears no disagreement among interactionists regarding simultaneous and mutual influence of the three factors mentioned above. They are, however, divided as to the nature of interrelation between group atmosphere and performance. Likert, Schachter et al., and Kahn and Katz inclined to underscore the human relation aspect in preference to the job-related qualities, while Shaw and Fiedler tended to hold an opposite view.

In fact, Likert (1961) found that a permissive, employee-

centered and supportive attitude of supervisors is conducive to a high level of production. In a similar vein, Schachter, Ellertson and McBride (1960) showed that cohesive groups were more successful at overcoming forces with direction opposite to group induced direction. And Kahn and Katz's (1960) observations were quite close to those of Likert that effective supervisors were generally employee-oriented and more understanding.

However, data are not consistent enough to make one accept this picture of uniform relations without reserve. It has become increasingly clear that the relations among different aspects of small groups are exceedingly complex. This complexity was forcefully illustrated in Shaw's and Fiedler's experiments (Shaw, 1955; Fiedler, 1964).

Although Shaw's (1955) main interest was centered around leadership and communication nets and only in passing he touched upon the influence of types of leadership on morale and performance, yet his conclusions are valuable for the purpose of the present research. He noted that authoritarian leadership decreased independence for most of its members (and hence decreased morale), and decreased saturation effects for all group members (and hence improved performance). He discovered also that non-authoritarian leadership increased independence for all group members (and hence increased morale) and increased saturation for all group members (and hence lower performance).

More directly relevant to the present study are Fiedler's personality variables ASO (Assumed Similarity between Opposites) and LPC (least preferred co-worker). Since there exists a high correlation between these two (.70 to .93), they could be used interchangeably. And since LPC score is easier to obtain, it is to be preferred. There exists an entirely different approach between a person with high LPC score and a person with low LPC score. A high LPC person tends to see even a poor co-worker in a relatively favorable manner, while a low LPC person perceives his least preferred co-worker in a highly unfavorable and rejecting manner. The former, acting as a leader, promotes member satisfaction and lowers member anxiety; the latter unconcerned with having pleasant relationships with others in the group, demands and obtains more participation and performance. Is LPC then a measure of psychological distance?

Fiedler in one of his earlier papers (1958) interpreted ASO (or LPC) as a measure of emotional warmth and acceptance as against psychological distance and rejection. But in a more recent paper on "A Contingency Model of Leadership Effectiveness" (1964) he corrected himself, saying that this interpretation now appears to be an oversimplification. The reason he gave for the change was that individuals with low ASO tend to be more punitive, although not necessarily more distant. This means that LPC (or ASO) points to the leader's

attribute of differentiation, tolerance and directiveness, and that it does not include the dimension of warmth and popularity. This distinction becomes more apparent in cases, real or experimental, in which the leader who is low in LPC has more effective work groups when either his position power or task structure is high and leader-member relationships are favorable. When leader power or task structure is low and leader-member relations are poor, then the high LPC leader has a more effective group." (Fiedler, 1964 p. 176)

Another fine point to be stressed is that psychological closeness would interfere with a leader's evaluative effectiveness only when closeness degenerates into attachment. Thibaut and Kelley's (1965) insight into the matter is most enlightening with regard to the distinction and relation between psychological closeness and evaluative effectiveness. They found that "the objective evaluative attitude which Fiedler states is necessary for an effective leader to maintain, need not be compromised by his expressing an interest in his men or giving them help and support on the job, for these activities do not necessarily render the supervisor emotionally dependent upon his subordinates. Indeed, we would ordinarily expect such activities to increase their dependency upon him. Only if the nature of the personal contact is such as to cause the supervisor to become personally attached to the men is it likely to interfere with his ability to evaluate and discipline them" (p. 285).

To say that the interaction among LPC group situations and performance is of an exceedingly complex nature is to belabor an obvious point. About this complex interaction, Fiedler (1964) reported that managing, controlling leader attitudes appear most effective under group situations which are either very favorable or very unfavorable to the leader; permissive, accepting leader attitudes are most appropriate under conditions which are only moderately unfavorable. In other words, the correlation takes, instead of a linear form, a bow-shaped form.

The experiment presented in this paper is an extension of the previously cited work by Fiedler. Although the studies of Fiedler and his associates have demonstrated that LPC is a relevant leadership characteristic, there has been no research that explores the relevancy of this characteristic for followers or leader-follower combination. Haythorn (1956) and Hoffman (1962) have presented convincing evidence that leader-follower homogeneity or heterogeneity of personality characteristics exerts considerable influence on both the group performance and group atmosphere. It is reasonable to assume from the evidence previously cited, that leader-follower homogeneity or heterogeneity of LPC would be an influencial determinant of group performance and atmosphere.

The experiment is designed to study the effects of interaction between the homogeneity and heterogeneity of leader-members' LPC dimensions on group performance and satisfaction

in a non-stressful three-man group situation, employing one human-relation task and one problem-solving task as testing instruments.

Hypothesis to be tested are based on the theoretical model of contigency established by Fiedler. Three architectonic situational components of the model, which affect the leader's influence are: a) the leader's personal relation with members of his group, b) the degree of structure in the task which the group has been assigned to perform, and c) the power and authority which his position provides. In relation to the present working conditions, it appears that during the short period of 40-minute interaction, the group atmosphere depends almost entirely on leader-members' LPC, the task structure component is great for Task I (Task-oriented problem) and minimal for Task II (Human-relation problem) and the position-power component is null in all cases.

Specifically the hypothesis of this experiment are as follows:

1. Regardless of sex differences, groups with low LPC leader and low LPC members perform better Task I, less well Task II, and show little group satisfaction.

2. Regardless of sex differences, group with high LPC leaders and high LPC members perform less well Task I, better Task II, and show great group satisfaction.

3. Regardless of sex differences, groups with mixed LPC leader and members (either high LPC leader with low LPC members or vice versa) show moderate performance for either task, and medium group satisfaction.

PROCEDURE

Subjects in this experiment were 114 freshmen at Loyola University. All subjects were obtained from introductory education or psychology classes. The subjects took part in this experiment during their regular classroom meetings.

Variables

a. Independent variables.

LPC is one of the independent variables. Its nature had been discussed in the survey of the literature. Of all LPC scores obtained from 25-paired-adjective checklists (Appendix I), the top 40 percent was defined as high, and the lower 40 percent as low. In other words, 57 high (28 boys and 29 girls) and 57 low (26 boys and 31 girls) had remained from the elimination of the middle 20 percent of the total LPC scores.

Leadership is the second independent variable. A leader is the one who assumes leadership behaviors appropriate to his situation. Behaviors required from a leader in a problem-solving situation could be enumerated as follows: he should keep members' attention on the goal, guide the discussion, clarify the issue, develop a procedural plan and evaluate the result and group decision. In addition to these behaviors, leadership is operationally defined as one who is designated to the position and holds a central place of communication. These specific instructions (Appendix II) were communicated

to the group leaders at the outset of discussion period.

b. Dependent variables.

Two dependent variables which occupied the focal point in the experiment were group performance and satisfaction.

Bass's (1954) description of an efficient group became classical: "By an efficient group, we mean a group which selects and achieves a maximum amount of what is supposed to accomplish. An efficient work group does this with the least waste of time and energy."

More concisely group effectiveness was defined by Georgopoulous and Tannenbaum (1957) as "the extent to which an organization as a social system, given certain resources and means, fulfills its objectives without incapacitating its means and resources and without placing undue strain upon its members."

Both Bass's description, and Georgopoulous and Tannenbaum's definition assume: (1) the achievement of group objectives, and (2) this achievement does not surpass the group means and resourdes nor is it so facile as to demand no effort at all. The assumptions seemed to be adequately met for the both tasks presented for performance. Judged from the result as well as from the process, Rimoldi's Problem 42 (Appendix III) appears to be neither too hard nor too easy for for the subjects. Besides Erdmann and Burger's findings amply confirm this point of view (1964, 1965). On the other hand,

none of the students seemed to be familiar with the problem. The same assumptions were fulfilled regarding Shaw's (1963) human-relation problem (Appendix III). Indeed, according to the general estimate of graduate psychology students of Florida University, the problem has a population familiarity score of 5.94 (Max. = 8) and a difficulty score of 3.05 (Max. = 8). This indicates that the task concerned is neither too easy nor too difficult.

Performance could be thus operationally defined:

For Task I, by the correct final solution and efficiency by which the solution was arrived at as measured by the pulling-out method (Rimoldi et al., 1964).

For Task II, by the degree of closeness of Ss' solutions to the 'ideal' solutions proposed by Shaw (1963).

Group satisfaction is the second dependent variable. It consists in feelings of pleasantness, agreeableness and conviviality. These feelings may result from a realization of individual needs without respect to the common good of the group. They may also be a personal satisfaction as an outcome of group interaction. It is not totally unthinkable that for lack of commonness of purpose and cooperation, group goal attainment and group satisfaction become impossible, whereas individual goal and satisfaction having little reference or even being drastically opposed to the common objectives, could be safeguarded. What mainly concerns the present experiment

evidently is not individual satisfaction as dissociated from the group interest, but rather individual satisfaction as related to the group either as a result of task performance or as a result of leader-member interaction. Group Satisfaction in this case is operationally defined by Ss' report on personal feelings in response to two questionnaires about the leader and the group atmosphere (Appendix IV).

Experimental design

The project was carried out in two phases:

a. During the regular classroom period 193 students responded to the paired-adjective checklists used by Fiedler to obtain LPC scores.

b. Based on th LPC scores only 54 boys (28 high LPC and 26 low LPC) and 60 girls (29 high LPC and 31 low LPC) met the standard and completed the whole experiment. These subjects were divided into groups of three of the same sex including one person who was designated as leader. The composition of each group was in accord with the outline of treatments. In all 38 groups were used in four treatments; they were distributed as follows: 9 groups of Hi-Hi (5 male groups and 4 female groups) 10 groups of Hi-Lo (3 male groups and 7 female groups) 10 groups of Lo-Hi (5 male groups and 5 female groups), and 9 groups of Lo-Lo (5 male groups and 4 female groups).

In the group session, the group was given two tasks to

complete; one human-relation task (Shaw, 1963) and one problem-solving task (Rimoldi, 1964). These tasks were counterbalanced as to their presentation to the group. Specific instructions were given to the person appointed as leader to lead the group. Other instructions were given to the members to obtain desired cooperation from them.

After completion of the group tasks members filled out, two questionnaires regarding (1) their satisfaction with the leader, and (2) their satisfaction with the group atmosphere.

The average time required for the first phase was 10 to 15 minutes, and for the second phase was 45 minutes.

RESULTS

The scoring procedure for the problem-solving task (Task I had been thoroughly discussed by Rimoldi, Erdmann, and Burger (1964, 1965). Here is a summary of their discussions.

For Task I, the best tactic is 3, 1, 5, 8. The minimum number of questions to be asked in order to solve the problem is 4. Rimoldi indicated that it is conceivable that a subject has the right final answer to the problem by using fewer questions than 4; this may be due to guessing, incomplete performance, poorly constructed problem, etc. Erdmann, by means of analysis of variance and "t" test, concluded that among three methods (Group method, schema method and pulling-out method) of evaluating performance, pulling-out method is superior to others, for it measures not only the quality of the final product, but also the process followed in producing this final product. This is the method used for evaluating the results of performance in the present experiment.

The procedure of pulling-out method involves a kind of matching of the observed sequence with one of the ideal sequences. Burger (1965) establishes the procedure in three steps: a. The construction of a schema matrix, which expresses the logical structure of the problem, and in which columns represent questions, and rows represent order in the sequence, and proportion allotted to each correct question is entered into cells.

b. Irrelevant questions are eliminated from the group's tactics. The remaining questions are then given values determined by the schema matrix, and these values are summed.
c. Finally, this sum is divided by the total number of questions asked. The schema matrix for Task I is as follows:

Questions

ORDER	1	3	5	8
1		.25		
2	.25			
3			.25	
4				.25

Thus the range of possible scores is from 1/10 or .10 to 1/4 or .25, with .25 being the perfect score.

Table I reports the means, standard deviations and Ns of the treatment groups for Task I. Table II reports the results of a 2 (sex) x 2 (High or Low LPC leader) x 2 (High or Low LPC members) analysis of variance for unequal cell frequencies (Winer, 1962). The effects of the order in which the group worked on the two tasks has been ignored in the analysis. This is due to the fact that the order effects are not of experimental interest in this research and also because of the low frequencies in some cells.

The only significant effect in analysis of variance is that due to sex. An inspection of the means presented in Table 1 reveals that males were far superior to females in

their performance on this task. In fact, all male groups received perfect scores on this task and the only variation on this task occurred with female groups.

None of the other main effects approached statistical significance, nor did any of the interactions. Thus our hypothesis that suggested there would be differences due to the leader-member composition on LPC receives no support on this task.

Task II was the human relation task. The method of scoring group performance on this task consists in obtaining the sum of absolute differences between the five solutions checked by the group and the "ideal" ranking of the same solutions proposed by Shaw (1963). In order to avoid a zero value in case of perfect matching, 1 was added to each absolute group difference. For example, if Group A checked B, E, D, A, C, the absolute group difference would be:

$$\begin{array}{llllll} 1 & (B) & - & 1 & (B) & = 0 \\ 2 & (E) & - & 2 & (E) & = 0 \\ 4 & (D) & - & 3 & (A) & = 1 \\ 3 & (A) & - & 4 & (D) & = 1 \\ 5 & (C) & - & 5 & (C) & = 0 \\ \hline & & & & & 2 \end{array}$$

The group score would be 2 + 1 = 3.

Table III presents the means, standard deviation and Ns of the treatment groups for Task II. Table IV presents the

results of the analysis of variance for Task II. Neither any of the main effects nor any of the interactions reached statistical significance at ordinarily accepted levels. Again the hypothesis which suggested that LPC dimension would influence in Task II performance received no support from the experiment.

The scoring procedures of group atmosphere and of members' feelings about their leader are exactly the same as for LPC scores. The score of each individual subject was obtained by a simple addition of all the numbers checked by the subject. The group raw score resulted from the sum of scores of subjects concerned, whereas the mean score of the group resulted from the group raw score divided by the number of persons in questions.

Table V indicates the means, standard deviations and Ns for group atmosphere as reported by the group members including the leader. Table VI presents the analysis of variance of the main effects and interactions, all are below the accepted levels of significance. Thus the hypothesis suggesting that sex differences or the leader-member LPC combination had significant bearing onggroup atmosphere was not confirmed.

Similarly Table VII reports the means, standard deviations and Ns for group feelings about theleader as reported by other members of the group. Table VIII reveals no significant F value originated from any source of variation. Thus the hypo-

thesis suggesting that sex differences or the leader-member LPC combination would create different feelings about the leader received no marked support.

TABLE I

Group Performance Scores of the Problem-solving Task

Task I

		MALES		FEMALES	
		High LPC Leader	Low LPC Leader	High LPC Leader	Low LPC Leader
High LPC Member	Mean	.25	.25	.1958	.1522
	S. D.	0	0	.0346	.0616
	N	5	5	4	5
Low LPC Member	Mean	.25	.25	.2108	.1917
	S. D.	0	0	.9459	.6324
		3	5	7	4

TABLE II

Analysis of Variance of Group Scores on Task I

Source of Variation	df	MS	F
A Sex	1	.03541	19.6417"
B Leader	1	.00227	1.2590
C Members	1	.00182	1.0064
A x B	1	.00227	1.2594
A x C	1	.00182	1.0064
B x C	1	.00045	-
A x B x C	1	.00045	-
Error	30	.00180	
Total	37		

"PL>.005

TABLE III

Group Performance Scores of the Human-relation Task Based on Group Mean Differences D

Task 1

		MALES		FEMALES	
		High LPC Leader	Low LPC Leader	High LPC Leader	Low LPC Leader
High LPC Members	Mean	3	44.8	4	4.20
	S.D.	0	1.6	2.24	.98
	N	5	5	4	5
Low LPC Members	Mean	4.30	3.4	4.28	4.5
	S.D.	1.08	1.50	1.40	.87
	N	3	5	7	4

Table IV

Analysis of Variance of Group Scores on Task II Based on Group Mean Differences D

Source of Variation	df	MS	F
A Sex	1	1.2712	-
B Leader	1	.9988	-
C Members	1	.1362	-
A x B	1	.0908	-
A x C	1	.2270	-
B x C	1	4.4946	1.9786"
A x B x C	1	4.2676	1.8745
Error	30	2.2766	-
Total	37		

"PL<.20

TABLE V

Scores of Group Atmosphere

		MALES		FEMALES	
		High LPC Leader	Low LPC Leader	High LPC Leader	Low LPC Leader
High LPC Members	Mean	66.73	71.33	68.08	70.93
	S.D.	7.46	4.03	1.47	7.73
	N	5	5	4	5
Low LPC Members	Mean	65.44	69.00	72.56	67.25
	S.D.	2.42	1.80	6.74	4.79
	N	3	5	7	4

Table VI

Analysis of Variance of Group Atmosphere Scores

Source of Variation	df	MS	F
A Sex	1	22.70	-
B Leader	1	18.48	-
C Members	1	4.54	-
A x B	1	63.97	2.0819"
A x C	1	11.08	-
B x C	1	48.03	1.5631
A x B x C	1	25.02	-
Error	30	30.73	-
Total	37		

"PL<.20

TABLE VII

Scores of Group Feelings About the Leader

		MALES		FEMALES	
		High LPC Leader	Low LPC Leader	High LPC Leader	Low LPC Leader
High LPC Members	Mean	61.60	68.10	64.00	60.40
	S.D.	7.57	2.63	2.32	11.14
	N	5	5	4	5
Low LPC Members	Mean	63.33	64.40	66.86	66.25
	S.D.	6.29	4.61	2.68	4.92
	N	3	5	7	4

TABLE VIII

Analysis of Variance of Scores of Group Feelings About the Leader

Source of Variations	df	MS	F
A Sex	1	.23	-
B Leader	1	6.36	-
C Members	1	25.42	-
A x B	1	78.59	1.7569
A x C	1	64.83	1.4493
B x C	1	3.81	-
A x B x C	1	39.82	-
Error	30	44.73	-
Total	37		

Discussion

Fiedler's (1964) LPC has probably been the most extensively researched leader characteristic in the past few years. However, previous to the research reported in this paper no one had investigated LPC as a follower characteristic. The study reported here investigated leader-member homogeneity-heterogeneity of LPC on performance on two tasks. The general conclusions of this research can be stated very briefly — within the limits imposed by the design of this study, leader-member homogeneity-heterogeneity of LPC was found of no major importance as a determinant of group performance or of group atmosphere.

In Task I (problem-solving task) a significant effect was found suggesting that males are better than females on this task. This finding was unexpected as previous research on this task had found wide differences in individuals' abilities to solve this problem. However, the previous research had not used it as a group task but had centered on individuals working the task independently. The reason for the sex difference at a probability level higher than .005 is difficult to ascertain at this point. One possible explanation of the large sex difference is that different group processes may have taken place in the male and female groups. Is it possible that male members were working in a situation in which the correct answer could be heard and accepted, as

Hoffman (1962) has pointed out? A more plausible explanation would be that males are generally more interested in and used to this type of task. Interest and especially experience are definitely determinant factors in problem-solving tasks. This has been the rationale behind Rimoldi's (1964) research that problem-solving ability could be trained and improved. Familiarity with and experience in problem-solving tasks in the past might have differentiated the males of whom all had perfect scores from the females of whom only 40 percent had perfect scores. However, whether or not experience had been actually a determinant factor in the group process is a matter of speculation and there is no direct evidence to suggest that it had been so.

No other main effect or interaction approached any level of significance for Task I. At least for this task, leader-member homogeneity-heterogeneity appears not to be a relevant variable influencing group performance.

No sex difference appeared in Task II (human relations problem). However, this task is considerably different than Task I and it is reasonable to assume that there is no difference between the sexes in ability to solve human relations type of problems. The only trend appearing in this task is associated with the leader-member LPC interaction. This suggests that the task performance means of high LPC and low LPC leaders are not quite the same for the high and low

levels of members' LPC. In other words, a tendency is detected from the leader-member LPC interactions that the task performance of high or low leaders is contingent to certain extent upon their combination with high or low LPC members. An inspection of group means indicates that homogeneous groups have lower group means of solution-score-differences (the absolute difference between the observed solutions and ideal solutions) than heterogeneous groups. This seems to indicate that high-high or low-low leader-member combination achieved Task II slightly better than high-low or low-high leader-member combination. But P of .20 does not quite reach an ordinarily accepted level of significance, and this difference may be merely chance. The trend, nevertheless, provides a clue to further investigations which might prove fruitful.

Concerning the measure of group atmosphere, none of the main effects or interactions attained any level of significance. However, leader-sex and leader-member interactions are indicative of trends that group atmosphere is somewhat determined by the LPC dimension of the leader. These trends (although significant at only the .20 level) suggest that heterogeneous groups have better group atmosphere than homogeneous groups, and that female groups headed by high LPC leaders and male group headed by low LPC leaders showed better group atmosphere.

With reference to members' feelings about the leader,

no main effects or interactions are reported as significant. Table VIII shows trends related with sex-leader and sex-member interactions. These trends suggest that high LPC male members found their leader more congenial and low LPC female members accepted their leader more readily. Moreover, females have more favorable feelings toward high LPC leaders and males have more favorable feelings toward low LPC leaders.

In summary, it is interesting to note that the trends suggest that better group atmosphere and greater satisfaction with the leader were reported in female groups when the leader was high LPC. The opposite trend exists for male groups. If our hypothesis alluded above is correct, i.e., that male are more interested and experienced in problem-solving, then we might expect them to prefer a task-oriented person as leader (i. e., a low LPC leader). Conversely if females are not very interested or experienced in problem-solving, they should prefer a leader who is not task-oriented (i. e., a high LPC leader). Thus these trends are consistent with our explanation of the differences found in Task I. The findings are also consistent with other research in the group dynamics area. Assuming that the leader sets the pace within a group, those groups interested in the formal goal of the group (in our case problem-solving) will be more satisfied with a leader and group who push toward this formal goal. Conversely if the group is not interested in the formal goal of the

group, they will be more satisfied with a leader and group who do not push toward this goal very strenuously. However, it must be remembered that our supportive data in this paper did not reach an acceptable level of significance.

Summary

Leadership researches in small group situation underwent many changes before they take the present form. They were the product of laboratory and rigorous methodologies. More recently, researchers find a special interest in integrating experimental data into theoretical systems.

In leadership studies, three factors stand out, leader's personality, leader-member relations, and group performance. Behavioral scientists of different schools agree on the importance of these factors; they disagree on the priority of their influence within the group. Roughly two schools emerged out of the controversy. One holds that task-oriented leaders demand and obtain better working results; the other holds that member-oriented leaders obtain better group morale and consequently better group performance.

In exploring leadership qualities, Fiedler (1964) describes a high LPC person as tending to see even a poor co-worker in a relatively favorable manner, and a low LPC person as tending to perceive his least preferred co-worker in a highly unfavorable and rejecting way. He observes further that under ordinary circumstances a high LPC leader performs more efficiently and that under stressful situations or under very favorable environment a low LPC leader functions better.

The present experiment is designed to study the effects of interaction between the homogeneity and heterogeneity of

leader members' LPC on group performance and satisfaction in a non-stressful three-man group, employing one human-relation task and one problem solving task as testing instruments.

More specifically it is hypothesized that sex differences exert no significant influence on group perofrmance or on group satisfaction, that high LPC persons perform better Task II (human-relation task), less well Task I (problem-solving task), and show great group satisfaction, that low LPC persons perform better Task I, less well Task II, and show little group satisfaction, and that mixed groups show moderate performance for either task, and medium group satisfaction.

The pulling-out method exposed in great detail by Burger (1965) was used for scoring Task I. Task II performance was evaluated from the sum of absolute differences between the observed solutions and ideal solutions proposed by Shaw (1963). The scoring procedures of group atmosphere and of members' feelings about their leader were designed by Fiedler (1964). Based on these results, the significance of differences was tested by means of four respective analyses of variance for unequal sizes (Winer, 1962).

None of the hypotheses had been verified from the results of four analyses of variance. The only significant effect in the analysis is that due to sex, which is contrary to the prediction. Therefore, within the limits imposed by the design of this study, leader-member homogeneity-heterogeneity

of LPC shows no determinant influence on group performance or on group satisfaction.

At least one trend is worth mentioning. This trend is observable from the analyses of group atmosphere and of feelings about the leader that males found greater satisfaction with low LPC leader whereas females found greater satisfaction with high LPC leader. The degree of interest, one's past experience and goal attainment may be accounted for the trend.

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Name _____

People differ in the ways they think about those with whom they work. This may be important in working with others. Please give your immediate, first reaction to the items on the following pages.

On each sheet are pairs of words which are opposite in meaning, such as Very Neat and Not neat. You are asked to describe several people with whom you have worked by placing a check in one of the eight spaces on the line between the two words.

Each space represents how well the adjective fits the person you are describing, as if it were written:

Very neat:	8	:	7	:	6	:	5	:	4	:	3	:	2	:	1	:Not neat
	Very neat		Quite neat		Somewhat neat		Slightly neat		Slightly untidy		Somewhat untidy		Quite untidy		Very untidy	

FOR EXAMPLE: If you were to describe the person with whom you are able to work best, and you ordinarily think of him as being quite neat, you would put a check in the second space from the words Very neat, like this:

Very neat:	8	:	7 ✓	:	6	:	5	:	4	:	3	:	2	:	1	:Not neat
	Very neat		Quite neat		Somewhat tidy		Slightly neat		Slightly untidy		Somewhat untidy		Quite untidy		Very untidy	

If you ordinarily think of the person with whom you can work least well as being only slightly neat, you would put your check as follows:

Very neat	8	:	7	:	6	:	5 ✓	:	4	:	3	:	2	:	1	:Not neat
	Very neat		Quite neat		Somewhat neat		Slightly neat		Slightly untidy		Somewhat untidy		Quite untidy		Very untidy	

If you would think of him as being very untidy, you would use the space nearest the words Not neat:

Very neat:	8	:	7	:	6	:	5	:	4	:	3	:	2	:	1 ✓	:Not neat
	Very neat		Quite neat		Somewhat neat		Slightly neat		Slightly untidy		Somewhat untidy		Quite untidy		Very untidy	

Look at the words at both ends of the line before you put in your check mark. Please remember that there are no right or wrong answers. Work rapidly; your first answer is likely to be the best. Please do not omit any items and mark each item only once.

Appendix I - 2

MY LEAST PREFERRED CO'ORKER Name _____

(Please rate the same person you have previously described)

1.	Pleasant	8	7	6	5	4	3	2	1	Unpleasant
2.	Friendly	8	7	6	5	4	3	2	1	Unfriendly
3.	Bad	1	2	3	4	5	6	7	8	Good
4.	Distant	1	2	3	4	5	6	7	8	Close
5.	Supportive	8	7	6	5	4	3	2	1	Hostile
6.	Sick	1	2	3	4	5	6	7	8	Healthy
7.	Contented	8	7	6	5	4	3	2	1	Discontented
8.	Stubborn	1	2	3	4	5	6	7	8	Not Stubborn
9.	Not enterprising	1	2	3	4	5	6	7	8	Enterprising
10.	Tense	1	2	3	4	5	6	7	8	Relaxed
11.	Not studious	1	2	3	4	5	6	7	8	Studious
12.	Beneficial	8	7	6	5	4	3	2	1	Harmful
13.	Unsympathetic	1	2	3	4	5	6	7	8	Sympathetic
14.	Impatient	1	2	3	4	5	6	7	8	Patient
15.	Happy	8	7	6	5	4	3	2	1	Depressed
16.	Clean	8	7	6	5	4	3	2	1	Dirty
17.	Unenthusiastic	1	2	3	4	5	6	7	8	Enthusiastic
18.	Not confident	1	2	3	4	5	6	7	8	Confident
19.	Disagreeable	1	2	3	4	5	6	7	8	Agreeable
20.	Unproductive	1	2	3	4	5	6	7	8	Productive
21.	Wise	8	7	6	5	4	3	2	1	Foolish
22.	Unadventurous	1	2	3	4	5	6	7	8	Adventurous
23.	Sociable	8	7	6	5	4	3	2	1	Unsociable

Instruction to the Leader

Distribute the other two instruction sheets to _____ and _____ .

The experiment in which you are about to participate is a group problem-solving situation. We are interested in observing how groups attempt to handle various kinds of tasks. You and two above mentioned participants will be asked to solve two problems working together as a group.

As leader, you are requested to play a particular kind of role. Guide the discussion, clarify the issue, rephrase ambiguous statements, synthesize suggestions, and arrive at a consensus about each move and the final answer. Write down clearly your choices (1st, 2nd, etc.).

Most of all, be yourself when you act as leader.

Instructions to Participants

We are interested in observing how groups attempt to handle various kinds of tasks. You will be given a task to be completed, working as a group.

In order to facilitate group interaction, it seemed desirable to appoint a leader to direct the group's activities. _____ has been appointed as leader of this group. Please follow his directions. And during the discussion address your suggestions to him for solving the problems.

Task I

Name _____

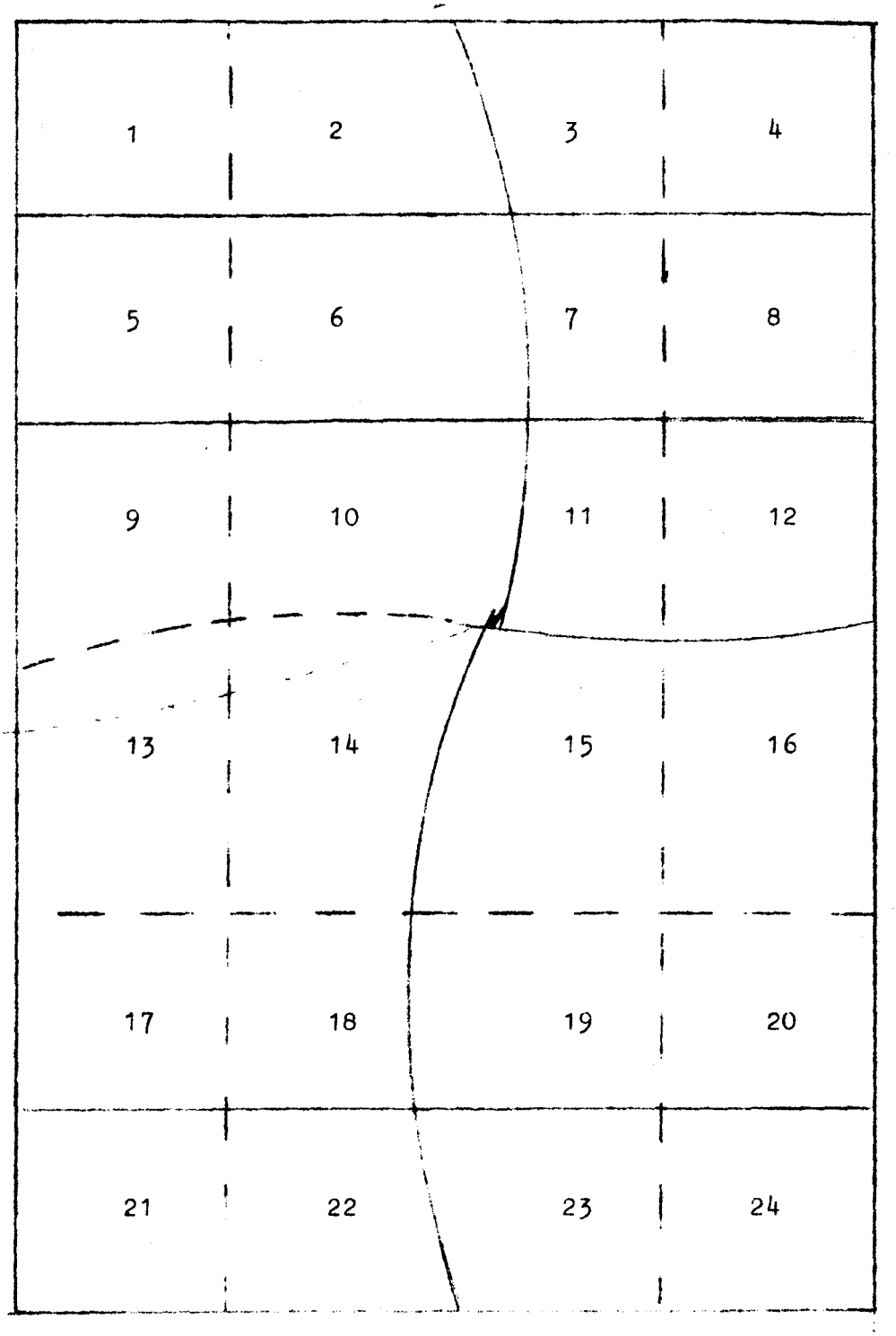
Instruction and Questions for Discovering an Area

This figure is composed of 24 areas. The numbers in the areas are merely for the purpose of identifying a particular area and have no bearing on the solutions of the problem whatsoever.

One of the areas has been selected. Your task is to discover the selected area. You may discover this area by using any of the questions you like to arrive at the answer.

This is a group task. Proceed by reading over all the questions. After sufficient deliberation and discussion under the leadership of the group leader, you have to arrive at a consensus each time you want to have a question answered. Mark 1 for the first question you want to have answered and the leader will read the answer to the question. Then you choose another question, and so on, until you are satisfied that you know the selected area. Write down the solution. Remember, you may ask as many questions as you need to find the correct area, but do not ask more questions than you need.

Questions	Choices
a. Is it above the unbroken curve line?	_____
b. Does it have 2 curved lines as borders?	_____
c. Is it to the right of the vertical curve line?	_____
d. Does it have 2 continuous straight lines and 2 broken lines as borders?	_____
e. Does it have 2 broken straight lines as borders?	_____
f. Does it have any combinations of 2 broken and 2 curved sides?	_____
g. Is it below the dotted curve line?	_____
h. Does it have 3 continuous straight lines and 1 broken straight line as borders?	_____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Task II

Name _____

Instruction: This is a group task. Discuss the case you have been given and try to arrive at a consensus regarding which of our suggested solutions is the best one. You will have 15 minutes to discuss the case and make your decision.

Case: Mr. Lee, a college graduate and successful lawyer, Vice President of the Citizen's Reform League, President of Rotary and ex-mayor of Amden, is now being spoken of as a possibility for next year's nomination for the U.S. House of Representatives. But Mr. Lee's wife, Cordelia, over the past ten years of his rise to success, has become an alcoholic, drinking more and more and keeping close to her home, never joining her husband in any of his activities. He loves his wife deeply and wants to help her. He has sent her to a sanatorium for treatment and has solicited the aids of the family doctor and rector, but, though there was a temporary improvement, Cordelia started to drink heavily as soon as she returned home. As an alcoholic, Cordelia stands in the way of possible future success for Mr. Lee, yet a divorce would hurt his political career. Mr. Lee has explained his wife's behavior as poor health resulting from the miscarriage of their first and only child a few years before. He continues to work tirelessly on his projects 13 or more hours a day even with ulcers and anxiety. What do you recommend to Mr. Lee?

Solutions:

1.

2.

3.

4.

5.

Task II - 2 Name _____

The following are possible solutions for the same case:

A. Enroll his wife in Alcoholic Anonymous.

B. Pay more attention to the needs of his wife.

C. Continue serving the public without the aid of his wife.

D. Adopt children, if possible, so his wife will have continuous companionship.

E. Temporarily give up politics until his wife's illness is cured.

Rank the suggested solutions according to the order of importance and quality:

1. _____
2. _____
3. _____
4. _____
5. _____

Please answer the following questions by checking one of the descriptions which seems to you the most proper about your leaders:

Favorable								Unfavorable
Very	Quite	Somewhat	Slightly	Slightly	Somewhat	Quite	Very	

1. Did your leader give you sufficient opportunity to voice your opinion?

8	7	6	5	4	3	2	1

2. Do you feel adequately understood by your leader in discussion?

8	7	6	5	4	3	2	1

3. Does the amount of control the leader had over discussion please you?

8	7	6	5	4	3	2	1

4. Did the leader's approach contribute much to the pleasantness of the group atmosphere?

8	7	6	5	4	3	2	1

5. Is it easy to talk to your leader?

8	7	6	5	4	3	2	1

6. Is it easy to work with your leader?

8	7	6	5	4	3	2	1

7. If you should join a discussion group again, do you mind to be under the present leader?

8	7	6	5	4	3	2	1

8. Was the present leader permissive enough for individual contribution to the solution of the problem?

8	7	6	5	4	3	2	1

9. How do you like the way the discussion was conducted?

8	7	6	5	4	3	2	1

Appendix IV - 2

Name _____

Describe the atmosphere of your group by checking the following items:

1.	Pleasant	:	:	:	:	:	:	:	:	Unpleasant
		8	7	6	5	4	3	2	1	
2.	Friendly	:	:	:	:	:	:	:	:	Unfriendly
		8	7	6	5	4	3	2	1	
3.	Bad	:	:	:	:	:	:	:	:	Good
		1	2	3	4	5	6	7	8	
4.	Worthless	:	:	:	:	:	:	:	:	Valuable
		1	2	3	4	5	6	7	8	
5.	Distant	:	:	:	:	:	:	:	:	Close
		1	2	3	4	5	6	7	8	
6.	Cold	:	:	:	:	:	:	:	:	Warm
		1	2	3	4	5	6	7	8	
7.	Quarrelsome	:	:	:	:	:	:	:	:	Harmonious
		1	2	3	4	5	6	7	8	
8.	Self-Assured	:	:	:	:	:	:	:	:	Hesitant
		8	7	6	5	4	3	2	1	
9.	Efficient	:	:	:	:	:	:	:	:	Inefficient
		8	7	6	5	4	3	2	1	
10.	Gloomy	:	:	:	:	:	:	:	:	Cheerful
		1	2	3	4	5	6	7	8	

TOTAL _____

APPROVAL SHEET

The thesis submitted by Reverend Bernard Chu, S.J. has been read and approved by three members of the Department of Psychology.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

July 26 1966
Date

Signature of Adviser