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A PARTIAL TEST OF THE CONTINGENCY MODEL
ON ADULT-LED GROUPS OF CHILDREN

BY

JEFFREY WAYNE JONES

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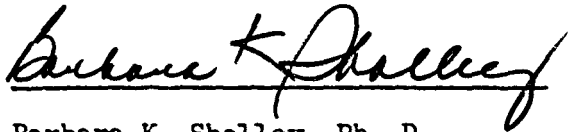
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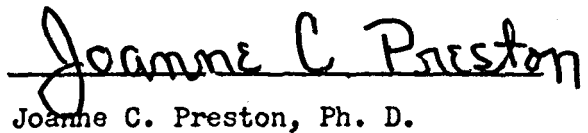
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Abstract

The problem was to test the applicability of Fiedler's contingency model on 15 adult-led groups of children in a field situation. The effectiveness of high and low least preferred co-worker (LPC) leaders on structured and unstructured group tasks was investigated when leader-member relations were good and leaders had strong power. The data were analyzed in a 2 x 2 factorial design using the analysis of variance. None of the F tests reached statistical significance, thus the model was not supported. Several possible reasons for the findings were given as well as suggestions for future research.

Fiedler's (1964, 1967) contingency model of leadership effectiveness predicts group performance on the basis of the group leader's style of leadership and the favorableness of the task situation for the leader. These two variables interact such that in very favorable and very unfavorable situations "task oriented" leaders will be more effective while in situations of intermediate favorableness "relationship-oriented" leaders will produce the best performance by the group.

The model applies specifically to interacting task groups (Fiedler, 1964, 1967; Fiedler & Chemers, 1974), which are groups with assigned tasks and explicit goals that are generally prescribed by the larger organization to which the group belongs. Interacting groups refers to those in which the members work interdependently and are generally rewarded as a group or else the leader is rewarded singly, thus the leader's job centers around directing and coordinating the group members.

The contingency model holds three factors to be the critical determinants of favorableness of the situation for the leader. In order of importance they are: (1) leader-member affective relations, (2) the degree to which the task is structured, and (3) the amount of power inherent in the leader's position as leader.

Leader-member relations are considered most crucial because the leader whose members are loyal and devoted is believed likely to receive greater cooperation and compliance from the members than a leader who is rejected and disliked. Similarly, the leader's job is presumed to be much easier when the task is structured and clear-cut than when it

is vague and unstructured. A position of power should also make the leader's job easier since a powerful leader has the authority to reward and punish the members and he can exert greater control over them. A leader holding a relatively weak position cannot as easily influence the members to comply with and accept his direction.

To assess leadership style, Fiedler developed a personality measure, the LPC scale. It asks the leader to think of all the people with whom he has ever worked and to select the one person whom he considers to be his least preferred co-worker (LPC). The leader then rates this person on a set of items designed to describe the co-worker's personality. A high LPC score indicates that the leader sees even his least preferred co-worker in relatively favorable terms. According to the theory the high LPC leader distinguishes between his co-worker's job performance and his personality characteristics. The low LPC leader tends to link the co-worker's poor task performance with undesirable personal qualities. There have been numerous studies supporting the differentiation of leaders according to LPC rating (e.g., Hawkins, 1962; Fiedler, 1962; Meuwese, 1964; Graham, 1968).

The contingency model predicts that groups with low LPC leaders will perform better when the situation is either very favorable or very unfavorable for the leader. Groups with high LPC leaders will perform better in situations of intermediate favorableness. A continuum of favorableness is obtained by dichotomizing each of the three variables that determine the situation for the leader (see Table 1).

Fifteen different studies conducted prior to 1963 used a variety of different Ss such as blue collar workers (Cleven & Fiedler, 1956),

Table 1
 Classification of Group Task Situations
 on the Basis of Three Factors

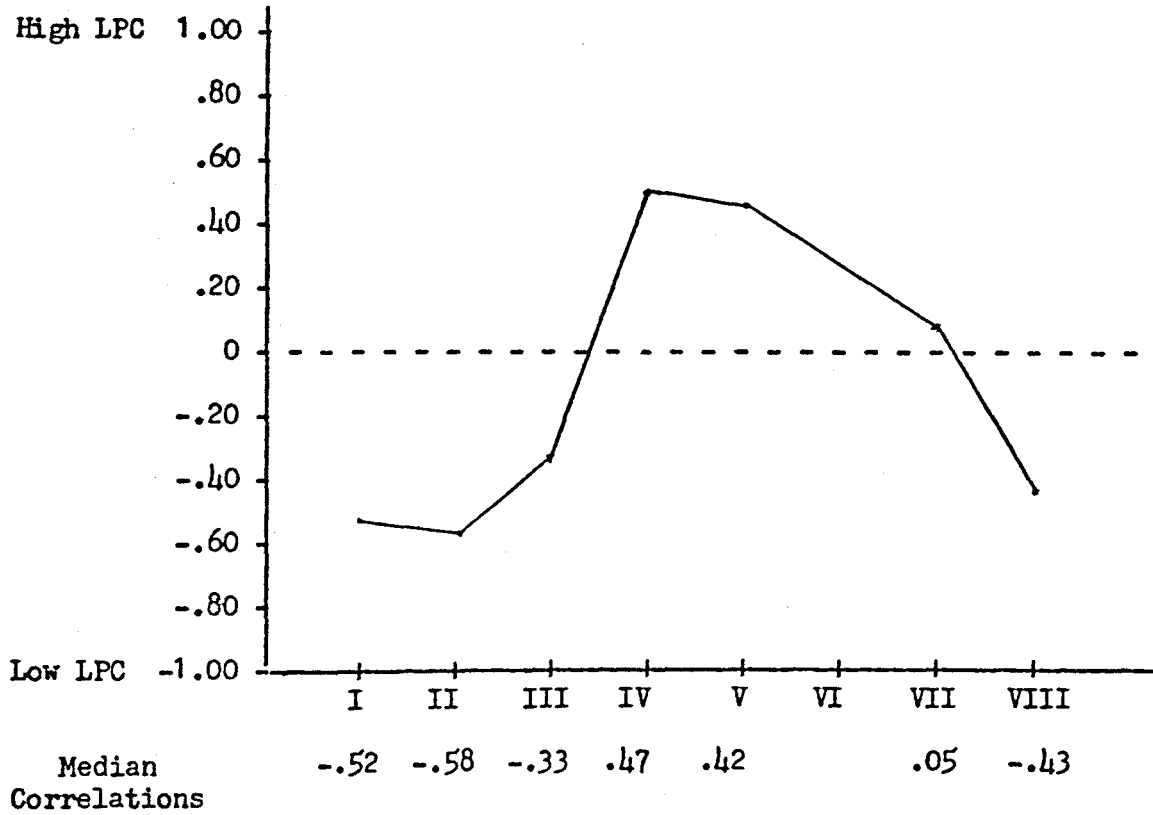
	Cell	Leader-Member Relations	Task Structure	Position Power
Favorable	I	Good	High	Strong
	II	Good	High	Weak
	III	Good	Low	Strong
	IV	Good	Low	Weak
	V	Moderately Poor	High	Strong
	VI	Moderately Poor	High	Weak
	VII	Moderately Poor	Low	Strong
Unfavorable	VIII	Moderately Poor	Low	Weak

military crews (Fiedler, 1955; Hutchins & Fiedler, 1960; Havron, Fay, & Goodacre, 1951), management personnel (Godfrey, Fiedler, & Hall, 1959), and students (Fiedler, 1954; Fiedler, Meuwese, & Oonk, 1961). Some of the studies used ad hoc groups formed for the purpose of the experiment (Fiedler called these "laboratory" studies) while others used naturally appearing groups ("field" studies). Taken together these investigations provided correlations between LPC and group performance for each of the cells in the model. A bow shaped distribution is obtained when the median correlations are plotted for each cell (see Figure 1).

In a review of later studies which attempted to test the contingency model Fiedler (1971b) had four independent judges read the methodology sections (and certain other relevant sections of the longest articles) but not the results of the various investigations. He considered a study as validation evidence of the contingency model if three of the four judges agreed on which cell of the model was being tested in each case.

The nine studies covered in Fiedler's (1971b) review which were considered acceptable tests of the contingency model produced 45 correlations, 34 of which were in the predicted direction, a finding significant at the .01 level by the binomial test. It was noted, however, that 5 of the 10 correlations for cell II were in the opposite direction to that predicted, and therefore cast considerable doubt on the overall generality of the model. This led Fiedler to consider the results of field and laboratory experiments separately, a procedure he justified by the fact that the original data for cells I, II, and V of the model were obtained in field studies while data for cells III, IV, VII, and

Figure 1
Correlations Between Leader LPC Scores
and Group Performance for Each Cell



VIII came (with one exception) from laboratory experiments. Median correlations for field studies were all in the predicted direction as were 13 of the 15 separate correlations obtained in the studies ($p < .05$ by the binomial test). Fiedler concluded that "considering the small number of studies and the small number of cases within each of these studies, the results seem rather remarkably consistent with the 1964 data, suggesting that the model is valid for the prediction of leadership performance under field conditions [p. 141]."

Regarding laboratory studies, Fiedler concluded that the model is not adequate in predicting performance in cell II under laboratory conditions but he noted that 22 of the 29 predicted correlations were in the expected direction ($p < .01$ by the binomial test). He suggested that it is difficult to manipulate leadership variables in experimental studies (e.g., high position power and very poor leader-member relations) and some important aspects of real life situations may not be easily produced in the laboratory. The entire model was thus deemed predictive of group performance in field studies but not completely under laboratory conditions. Results of laboratory studies were considered tentative except for clear support for cell IV and lack of support for cell II. The present investigation therefore employs naturally appearing groups in a field situation.

The contingency model has come under attack from several sources. Graen, Alvares, Orris, & Martella (1970) criticized Fiedler for failing to use the usual tests for statistical significance in interpreting correlations. They also noted that the procedure of measuring group atmosphere after completion of the tasks could contaminate the leader's

rating by his knowledge of the group's performance.

Graen and his associates (Graen, Orris, & Alvares, 1971a) reported two independent studies which employed the same procedure in testing all eight cells of the contingency model. Correlations were computed for each cell ($N=6, 7, \text{ or } 8$) but none reached an acceptable level of statistical significance. In experiment I all but two of the correlations were in the predicted direction (those for cell I, .47 and III, .46 were not) but in experiment II five of the seven predicted correlations were opposite to the predicted direction (II=.18; III=.02; IV=.08; V=.52; VIII=.44). An additional ANOV was performed for each task using group atmosphere, leadership style, and position power as independent variables and group performance as the dependent variable. Leadership style was nested within both position power and group atmosphere and the median LPC score was used to dichotomize leadership style within each cell. None of the four analyses of variance yielded an acceptable level of statistical significance for the data. The authors concluded that "the studies not only lend evidential disproof to the contingency model, but also indicate that it may not be summarizing meaningful and stable relationships [p. 200]."

Fiedler (1971a) criticized the methodology of the Graen et al. (1971a) study at several points. He suggested that the manipulation of position power was inadequate and he noted that high position power requires that the leader must have the ability to give rewards and punishments. This had been done previously and successfully in the laboratory only by using Ss who already had some formal position such as military rank (e.g., Fiedler, 1966; Skrzypek, 1969). In addition,

the leaders in the Graen et al. study were demoted to member status for the second task and were replaced as leader by one of the group members, a procedure which probably weakened the position power of the leader role.

Fiedler also suggested that the manipulation of task structure in the Graen et al. (1971a) study was weak. He noted that the average ratings of structured and unstructured tasks in the studies reported by Fiedler (1967) were 7.39 and 3.15 respectively, on an 8-point scale. Scores for the structured tasks in the Graen et al. experiments were 5.86 and 5.45 versus 3.69 and 3.60 for the unstructured tasks. The difference between scores for the two tasks was relatively small and the structured tasks' scores were less than 1 point above the cutting score of 5.0. He concluded that "a study which seeks to disconfirm a theory should not rely on marginal experimental manipulations to test a null hypothesis [p. 203]." In conclusion, Fiedler termed the Graen et al. experiments "inadequate or borderline" and therefore "not critical or very meaningful tests of the contingency model [p. 204]."

Ashour (1973) echoed Graen's et al. (1970) criticism of Fiedler's use of nonsignificant correlations in support of the contingency model. He also stated that Fiedler's (1971b) use of the binomial test is misleading. By applying the binomial test to a large number of correlations it is possible to obtain statistical significance even though the correlations might only range from .01 to .05.

In compliance with suggestions by Graen et al. (1970, 1971a) and Ashour (1973) leader-member relations in the present study will not be measured following task completion but will be assessed in the middle

of data collection for a structured task and just prior to an unstructured task in order to avoid possible contamination by the leaders' knowledge of task performance.

Shiflett (1973) criticized the use of Spearman's rank correlation in tests of the contingency model. He reanalyzed data from several studies which tested the model (Shiflett & Nealey, 1972; Hunt, 1967; Hardy, 1971) and he concluded that the Spearman rank correlation tends to underestimate r when N is relatively large. In the case of Hunt's (1967) data, one of the Pearson r_s reached statistical significance where the Spearman ρ did not, thus providing stronger support for Hunt's conclusion that his data supported the contingency model.

Shiflett (1973) suggested that a more powerful statistical technique, such as the analysis of variance, might have yielded a greater number of significant results in previous studies than did the rank order correlation. He cited a study (Shiflett & Nealey, 1972) in which neither of two independent correlations between leader LPC and group performance reached statistical significance, however a significant interaction between leader LPC and position power for high ability groups was obtained by using the analysis of variance. He also pointed out that Hardy (1971) used the ANOV to obtain statistically significant results supporting three of the four cells tested. Independent correlations showed statistically significant support in only two of the cells Hardy investigated.

Shiflett (1973) reanalyzed the data from Chemers & Skrzypek's (1972) correlational study using a $2 \times 2 \times 2 \times 2$ factorial ANOV with repeated measures on the task factor. He found a significant ($p < .001$) main effect

for group atmosphere which accounted for 24 percent of the variance in performance scores. A three-way interaction between LPC, group atmosphere, and task structure was also significant ($p < .025$) indicating that, in accordance with the model, groups with low LPC leaders performed better than groups with high LPC leaders when group atmosphere was good and the task was structured and when group atmosphere was poor and the task was unstructured. He stated that "the set of eight statistically nonsignificant correlations, reported by Chemers and Skrzypek, actually are reflecting statistically significant effects accounting for about 28 percent of the performance variability [p. 434]." In conclusion, Shiflett suggested that "correlations have substantially outlived their usefulness within the framework of testing the contingency model [p. 438]."

In accordance with recommendations by Graen et al. (1971b) and Shiflett (1973) the analysis of variance procedure will be used to analyze the data in order to achieve greater statistical power than is possible with correlational procedures and to provide tests of both main effects and interaction. The present study is the first to use the analysis of variance to test the contingency model under field conditions.

The current investigation seeks to extend the application of the model to groups of children led by adults. Previous research has relied almost exclusively on adult populations. The frequency of adult-led children's groups in schools, camps, clubs, and organizations make them important subjects for research.

In a departure from prior studies the same scale will be used to measure group performance for both the structured and the unstructured task. Statistical comparisons between the resulting scores are more

appropriate when the scales are the same than when different measures are used. This procedure should reduce the error variance that is due to comparing data obtained from different measures.

Cells I and III were selected for investigation since they both prescribe good leader-member relations (poor leader-member relations being very difficult to obtain with naturally appearing groups). These cells were also chosen because they require high position power and the investigator hoped to take advantage of the high position power inherent in the relationship between adult leaders and children.

The specific hypotheses to be investigated are: (1) an interaction effect exists between LPC and task structure when leader-member relations are good and the leader has strong position power; (1a) groups with low LPC leaders perform better than groups with high LPC leaders when leader-member relations are good and position power is strong, regardless of task structure; (1b) the difference between the performance of groups with low LPC leaders and groups with high LPC leaders is greater when the task is structured than when the task is unstructured.

Method

Subjects. Subjects were eight groups of male and seven groups of female children and same-sex adult leaders at a co-ed residential summer camp. Each group included six to eight children who were grouped by age and/or class in school and ranged in age from 7 to 12. The adult leaders were the cabin counselors assigned to each group of children (one per group) and they ranged in age from 18 to 23. Counselors were typically college students or recent graduates.

Two groups of females were eliminated because their group atmosphere

A group atmosphere scale (Fiedler, 1967, p. 269) was used to assess leader-member relations [see Appendix B]. This measure is similar to the LPC scale and consists of 10 8-point scales of the semantic differential type (Osgood, 1952). Each item is anchored by bipolar adjectives (e.g., accepting-rejecting, enthusiastic-unenthusiastic, warm-cold) and scoring is the same as for the LPC scale. The possible range of scores is from 10 to 80.

Procedure. The leaders were told that the E wanted to obtain some "normative data for the standardization of some tests" and their cooperation was requested and received. They were further told that groups other than camp counselors would also be completing the scales and they were asked not to put their name on their test papers. The E determined who completed each scale by handing out an assortment of colored marking pens and covertly noting who used each different color. This procedure left the Ss with the impression that their scores were anonymous.

The LPC scale was administered by the E to the group leaders on three occasions: at the end of the second, sixth, and eighth weeks of the 8-week camp season. The experiment was begun at the end of the second week of camp in order to allow both campers and staff time to adjust to their new environment and to allow time for leader-member relations to develop.

The E administered the group atmosphere scale to the leaders at the end of the third week of camp. An average item score of 5.0 was used as the criterion for good leader-member relations. The E had no knowledge of either the LPC scores or the group atmosphere scores until all data

collection was completed.

Position power was considered to be high for the leaders since they were adults who had direct supervision over the children and they had the responsibility of maintaining appropriate control over their groups. Their role required them to reward and punish group members on their own, to instruct and coordinate the members in performing group tasks, and to motivate the children. They clearly had positions of legitimate authority over the campers, they enjoyed privileges which campers did not, and they could not be deposed or replaced by the children.

The structured task required that each group clean its own cabin every morning. The group members were responsible for putting their own belongings in order and making their own bed. The leader typically assigned each group member an additional task (e.g., sweeping the floor, emptying the trash) on a daily rotating basis. These tasks often required mutual assistance and cooperation (e.g., holding the dust pan for the person sweeping, waiting to empty the trash until all litter was picked up and deposited). All group members shared a "common fate" on the task since if their daily inspection score was unacceptable all campers had to return for a second clean-up during "free time." The E inspected each cabin an average of five times on randomly selected days. Data were collected during the third and fourth weeks of camp at approximately the same time on each day. A separate inspection, unrelated to the experiment, was made daily by a counselor who determined whether each cabin passed or failed. At the end of every two week period the cabin groups (one girls and one boys cabin) which scored highest on these daily inspections received a free item (e.g., candy, soda, ice cream)

for each group member at the camp store. The daily evaluations and the possibility of earning a reward were intended to motivate the groups in their task performance.

Cabin clean-up was considered highly structured since, in accordance with Fiedler's criteria, the goal was clearly specified (a clean and orderly cabin as explained by the head counselors on the first day), there were few alternatives in reaching the goal, goal achievement was fairly easily verified by anyone inspecting, and only one rather specific result was desired.

The unstructured task was the planning and execution of an original and entertaining skit with all group members participating. Thus the goal was rather vague, a given skit could be produced in a large number of different ways, an evaluation of the end result was less easily verified, and any number of different kinds of skits could be acceptable. The skits took place at the beginning of the fourth week of camp and were rated by the E. The two highest scoring groups received a free item for each member at the camp store.

Cabin clean-up and the production of a skit were selected as the tasks because they differed greatly in structure and because they were the only tasks in the existing camp program that all groups completed and that were routinely evaluated.

Results and Discussion

Test re-test reliability for the LPC scale was computed using the analysis of variance procedure as stated in Winer (1971). The overall reliability of the measure for the three administrations was .82 (N=8). Reliability over the 4-week period between the first and second adminis-

trations was .80 ($N=11$) and over the 2-week period between the second and third administrations was .90 ($N=8$). The 6-week reliability between the first and third administrations was .58 ($N=9$). These results are consistent with previous test re-test reliability coefficients (Fiedler, 1967; Stinson & Tracy, 1974) and suggest that LPC scores are reasonably stable [see Appendix C].

The mean item score for the high LPC group was 5.16 which is well within the approximate range of scores for high LPC leaders suggested by Fiedler (1967). The mean for the low LPC group was 2.86 which was slightly above the range of 1.2 to 2.2 approximated by Fiedler but the difference between the means for the high and low groups was significant at the .001 level ($t=4.64$).

The mean group atmosphere score for the high LPC leaders was 56.8 and for the low LPC leaders was 59.8 with an overall mean of 58.6. Leader-member relations were therefore shown to be good using Fiedler's criterion of 50 as a cut off [see Appendix D].

Since group atmosphere and position power were held constant, the data were analyzed in a 2 x 2 factorial design (Task Structure x Leadership Style). Scores from the structured and unstructured tasks were the dependent variables and leadership style was determined by the first administration of the LPC scale [see Appendix E]. It was hypothesized that an interaction effect exists between task structure and leadership style. The groups with low LPC leaders were expected to perform better than the groups with high LPC leaders on both tasks but the difference between the performance of high and low LPC groups was expected to be greater for the structured task than for the unstructured task. As can

Table 2

Summary of Analysis of Variance for High
and Low LPC Groups on the Structured and Unstructured Task

Source of variation	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Task structure (A)	43.07112	1	43.07112	3.0243
LPC (B)	1.83012	1	1.83012	0.1285
A x B	0.19013	1	0.19013	0.1334
Within cell	227.87000	16	14.24188	
Total	272.96137	19		

be seen in Table 2, none of the F tests ($df=1, 16$) were significant at the .05 level. All of the hypotheses were disconfirmed and neither cell I nor cell III of the contingency model were replicated.

In order to better compare the present data with results obtained in prior studies, Spearman rank order correlations, the most frequently used statistic in prior research on the contingency model, were computed for each task. The correlation between LPC and group performance for the structured task was .04 compared with -.52 predicted by the model. The correlation for the unstructured task was -.28 compared with -.33 predicted by the model. Neither correlation reached an acceptable level of statistical significance.

Because there were several tied ranks among the performance scores, Pearson product moment correlations were computed post hoc. The correlation between LPC and performance on the structured task was -.05 and did not reach statistical significance. The correlation between LPC and performance on the unstructured task was -.62, a figure which approached but did not reach the .05 level of significance. It would be inappropriate to compare these correlations with those predicted by the model, however, since the latter were based on the Spearman rank order statistic. The differences between these two sets of correlations add support to Shiflett's (1973) conclusion that use of Spearman's rank order statistic instead of Pearson's product moment correlation produces distortions related to sample size.

Conclusions

It is tempting to suggest, as Fiedler has often done in similar situations, that the Spearman r for cell III, being in the predicted

direction and very close to the correlation predicted by the contingency model, indicates support for the model. However when the data were subjected to the analysis of variance, a more powerful test, all support for the model disappeared. It appears that the data provide some validity for the criticisms of Fiedler's reliance on a less powerful statistical technique and on nonsignificant correlations to support the model.

Several other possibilities might be suggested as reasons for the lack of support for the contingency model in the present study. It could be that the single judge's ratings of group performance were unreliable and therefore did not accurately reflect group differences. Future investigators might be wise to use several judges whose ratings could be compared, thus providing an inter-rater reliability coefficient. The rating scale used might have been unreliable or insufficiently sensitive. Use of a standardized measure with adequate reliability and validity could strengthen subsequent investigations.

These two factors alone do not seem large enough to completely mask a real difference in group performance since in the case of the structured task, performance scores for all groups tended to be consistent throughout the period of data collection and scores for both tasks showed a reasonably wide range. Out of a possible range of 3 to 24 points, mean scores for the structured task ranged from 12.4 to 22.2 and scores for the unstructured task ranged from 9 to 21.

However, there seems to be an inherent problem in obtaining a sensitive and reliable measure of performance for unstructured tasks. In order to qualify as unstructured a task must have low "solution specificity" and low "decision verifiability," that is, there must be

several correct solutions and their correctness must not be easily demonstrable. How then can different judges be expected to agree on the quality of group performance on such a task? The variability inherent in evaluating the performance on an unstructured task would seem to be an extraneous source of error variance that could produce differences in performance for structured and unstructured tasks that are more apparent than real.

There may be another important source of variability in leadership situations which is not taken into account by the contingency model. Fiedler (1972) presented a reinterpretation of the LPC scale in which he suggested that in a stressful situation individuals tend to pursue primary goals, which for high LPC Ss consist of good interpersonal relations and for low LPC Ss consist of task accomplishment. In less stressful situations where the leader's role is easier, Ss could be expected to behave in ways that help them achieve their secondary goals, which for high LPC Ss consist of esteem from others through task accomplishment and for low LPC Ss consist of good interpersonal relations, especially as they lead to task accomplishment. Thus the differential motivation of high and low LPC individuals leads them to behave differently depending on the stressfulness of the situation. Fiedler suggested that this explains the sometimes weak and inconsistent results obtained by some leader descriptions and observations, and certain personality measures. The apparent inconsistencies were due to different kinds of test situations with varying degrees of stress, thus producing different behavior by high and low LPC persons.

But if the personality trait measured by the LPC scale is explained

in terms of motivational structure, what are the effects of different degrees of motivation on the part of the leaders? If as Fiedler suggests, high and low LPC Ss respond in opposite ways under high and under low stress situations, they might respond differently under high and under low motivation. It is hypothesized that in a highly motivated state individuals will tend to make a greater effort to achieve their goals than they will in a state of low motivation. Therefore if individuals have different goals, as Fiedler states is true of high and low LPC persons, these goals should be reflected in performance differences to a greater extent when motivation is high than when it is low. Differences in behavior between high and low LPC leaders (and between their respective groups) should be greater when the leaders are highly motivated than when their motivation is low. Moreover, if high motivation is induced through rewards distributed on the basis of group performance, low LPC individuals, who are already primarily motivated by task performance, could reach a higher state of motivation than high LPC persons. Clearly, the wide variety of field and laboratory situations used in the study of the contingency model have involved quite different levels of motivation on the part of the leaders as well as different sources of motivation.

Perhaps the lack of a significant relationship between LPC score and group performance in the present study was the result of poorly motivated leaders. Supervising cabin clean-up and organizing skits were two of the more unpopular duties of the counselors and unless a group's performance was noticeably and consistently inadequate it had little effect on the evaluation of the counselor in charge. A study which employs motivation

level as an independent variable might be able to clarify some of the inconsistencies found in research on the contingency model.

Another explanation that could account for the failure of this study to replicate cells I and III of the model is the use of children as Ss. This was the first study to use adult-led groups of children and it may be that the primary motivation of high and low LPC individuals is not the same with children as it is with adult subordinates. Even low LPC camp counselors, acting in loco parentis, may tend to be more relationship oriented with their young charges than they would with groups of adults. More studies using children as Ss are needed to determine if the contingency model is applicable to children. It would be particularly interesting to compare the performance of groups of children and groups of adults on the same tasks when the group leaders are the same.

In conclusion, this is yet another study which adds to the inconsistent results of tests of the contingency model. While the strength of the present study is not sufficient to reject the validity of the cells tested, it points to several areas where further research is needed before valid conclusions about the model can be drawn. Although Fiedler's theory has been a popular subject of investigation for the last decade, precious little conclusive evidence has accumulated concerning it. If the hypothesized differences between high and low LPC leaders do exist they appear rather elusive and one might wonder whether they are great enough to be meaningful, with practical significance worthy of the effort required to clarify them within the existing model.

Appendix A

Instructions for LPC Scale

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 page.

On the following sheet are pairs of words which are opposite in meaning, such as Very Neat and Not Neat. You are asked to describe someone with whom you have worked by placing an "X" 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 Some-what Neat Slight-ly Neat Slight-ly Untidy Some-what Untidy Quite Untidy Very Untidy

For example: If you were to describe the person with whom you are able to work least well, and you ordinarily think of him as being quite neat, you would put an "X" in the second space from the words Very Neat, like this:

Very Neat: 8 : X : 6 : 5 : 4 : 3 : 2 : 1 : Not Neat

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

Very Neat: 8 : 7 : 6 : X : 4 : 3 : 2 : 1 : Not Neat

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 : X : Not Neat

Look at the words at both ends of the line before you put in your "X". 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.

Think of the person with whom you can work least well. He may be someone you work with now, or he may be someone you knew in the past. He does not have to be the person you like least well, but should be the person with whom you had the most difficulty in getting a job done. Describe this person as he appears to you.

Appendix A (continued)

LPC Scale

Pleasant	: <u>8</u> : <u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u> :	Unpleasant
Friendly	: <u>8</u> : <u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u> :	Unfriendly
Rejecting	: <u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u> : <u>8</u> :	Accepting
Helpful	: <u>8</u> : <u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u> :	Frustrating
Unenthusiastic	: <u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u> : <u>8</u> :	Enthusiastic
Tense	: <u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u> : <u>8</u> :	Relaxed
Distant	: <u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u> : <u>8</u> :	Close
Cold	: <u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u> : <u>8</u> :	Warm
Cooperative	: <u>8</u> : <u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u> :	Uncooperative
Supportive	: <u>8</u> : <u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u> :	Hostile
Boring	: <u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u> : <u>8</u> :	Interesting
Quarrelsome	: <u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u> : <u>8</u> :	Harmonious
Self-assured	: <u>8</u> : <u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u> :	Hesitant
Efficient	: <u>8</u> : <u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u> :	Inefficient
Gloomy	: <u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u> : <u>8</u> :	Cheerful
Open	: <u>8</u> : <u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u> :	Guarded

Appendix C

Scores for Three Administrations of the LPC Scale

Subject	1st LPC	4-week LPC	6-week LPC
1	104	75	56
2	91	80	82
3	90	72	66
4	89	103	--
5	81	93	--
6	75	65	--
7	74	79	82
8	65	67	65
9	62	--	73
10	62	--	--
11	56	38	42
12	50	52	55
13	42	62	49
14	41	--	--
15	34	--	--

Appendix D

Group Atmosphere Scores for High and Low LPC Leaders

	Subject	Group Atmosphere Score
High LPC	1	64
	3	62
	5	53
	6	52
	8	53
Low LPC	10	68
	12	79
	13	49
	14	54
	15	49

Appendix E

Scores on a Structured Task and on an Unstructured Task
for High and Low LPC Leaders

	Subject	Structured Task	Unstructured Task
High LPC	1	16.6	17
	3	12.4	12
	5	22.2	12
	6	20.5	18
	8	20.0	19
Low LPC	10	17.2	10
	12	23.2	19
	13	20.25	19
	14	14.4	13
	15	14.6	13

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