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The Effect of General Versus Specific Coworker in Directions on Fiedler's Least Preferred Coworker Scale

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THE EFFECT OF GENERAL VERSUS SPECIFIC COWORKER IN DIRECTIONS
ON FIEDLER'S LEAST PREFERRED COWORKER SCALE

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Derrick Lottes

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THE EFFECT OF GENERAL VERSUS SPECIFIC COWORKER IN DIRECTIONS
ON FIEDLER'S LEAST PREFERRED COWORKER SCALE

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I dedicate this thesis to my family, especially to my fiancée. Without their understanding,

patience, and support, this educational process would have been difficult to accomplish.

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THE EFFECT OF GENERAL VERSUS SPECIFIC COWORKER IN DIRECTIONS ON FIEDLER'S LEAST PREFERRED COWORKER SCALE

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This study explored the effect of directions on the Least Preferred Coworker (LPC) scale; specifically, this study tested whether thinking of a generalized least preferred coworker (General LPC) would yield lower scores compared to thinking of a specific least preferred coworker (Specific LPC). The data supported this hypothesis as responses to the General LPC yielded more critical LPC scores than did responses to the Specific LPC. The hypothesis that thinking of a generalized least preferred coworker would yield more stable result than would thinking of a specific least preferred coworker was not supported. Finally, the hypothesis that LPC scores would shift categories (e.g., shifting from task-oriented to relations-oriented) more when thinking of a specific least preferred coworker than when thinking of a general least preferred coworker was not supported. This study provides supportive evidence of the importance of using the original test directions during test administrations.

Introduction

Leadership can be defined as "a process whereby an individual influences a group of individuals to achieve a common goal" (Northouse, 2010, p. 3). Researchers have developed many different theories to better understand and explain the processes of leadership. One type of theory is contingency theory. One of the most well-known and documented contingency theories was developed in the 1950s by Fred Fiedler and published in 1964 (Fiedler, 1964). Fiedler's contingency model states that the best leadership style is dependent upon the situation. Fiedler developed an instrument to identify leadership style called the Least Preferred Co-worker (LPC) scale. One of the major criticisms of Fiedler's theory is the lack of reliability of the LPC instrument and the lack of convergent validity. This paper addresses the LPC scale's lack of stability, more specifically, how directions can impact the stability of the responses to the LPC scale.

Research on the stability of the LPC has asked participants after collecting their responses whether the respondents were thinking of a specific, actual person as their LPC or a generalized, imaginary person as their LPC (Ambrosch, Lippert, & Schneider, 1978; Mitchell, 1970). The researchers found variation in that participants will think either of an actual person or of a generalized person as their LPC. Moreover, respondents with high scores (relations-oriented) tend to think of an actual LPC more than do those respondents with low scores (task-oriented). Additional research found that those respondents who think of a generalized LPC tend to have more stable responses across time (Stinson & Tracy, 1974).

This paper will describe Fiedler's contingency theory, the LPC scale, and the current study's hypotheses and methodology.

Contingency Theory

Prior research on leadership has primarily addressed two questions: 1.) What personality attributes make a good leader? and 2.) What personality attributes make a leader effective? (Fiedler, 1964). Up to the point in time that Fiedler was proposing his model of leadership, the first question had been thoroughly researched and was not a topic of interest. The latter question was the primary focus of researchers during this time because no major contributions had been published to address this question. However, research conducted around this time supported the influence of leader attributes on team effectiveness.

The concern with these studies was the lack of generalizability from one group to another. According to Janda (as cited in Fiedler, 1964), problems associated with the generalizability of these studies are that they used tailor-fitted measures, defined terms differently, and lacked systematization of the social context within the operation of the groups. These issues posed difficulties in replicating the results of the studies.

The contribution of the studies was that they identified two major clusters of leader attributes/behaviors (i.e., task-oriented and relations-oriented). Different researchers have named these two clusters differently throughout the years but the corresponding clusters have common features. Hare (as cited in Fiedler, 1964) noted the similar features in a summary of relevant research. Hare found that autocratic leadership styles promoted greater quantitative productivity, whereas democratic leadership styles promoted greater qualitative productivity and morale. Moreover, when the task required more central control, autocratic leadership style appeared to be most effective (e.g., industrial work, armed forces).

However, findings from the different studies had conflicting results (Fiedler, 1964). There were inconsistencies in the findings across studies. Katz and Kahn (as cited in Fiedler, 1964) supported the findings that democratic leadership styles promoted more morale and increased production. However, other studies found no relationship between leadership style and productivity. Moreover, Shaw's (as cited in Fiedler, 1964) research contradicted the findings from the former study in that an authoritarian leadership style promoted greater performance. These studies represent the problems associated with linking effective leadership to a specific personality attribute or leadership style (e.g., authoritarian, democratic). Fiedler suggested that some factor(s) other than power or type of task performance (i.e., quantitative or qualitative) was likely a contributing factor in the determination of the most effective leadership style in a certain situation.

In brief, prior research provided conflicting results concerning the relationship between leadership style and team performance. The next section will discuss the definitions of key terms.

Definitions of key terms.

Fiedler (1964) believed that rather than compiling the results of different studies to form a model of leadership, one study that was exhaustive and unified would more likely contribute to the development of a general model. Fiedler's terminology was defined for clarification purposes (refer to Table 1).

Table 1.
Definitions of terminology used in the development of the contingency model of leadership

Term	Definition	Comments
Group	"…a set of individuals who…have proximity, similarity, and share a 'common fate' on task-relevant events" (Fiedler, 1964, p. 152).	Worth noting is the differences between interacting groups and coacting groups. An example given in the literature of an interacting group is a basketball team. An example of a coacting group is a wrestling team. The difference lies in the interaction of the teammates within the realm of how each member contributes to the overall score. In an interacting group, the group members are interdependent; whereas in a coacting group, each member contributes to the overall score independently.
Leader	"…the individual in the group who directs and coordinates task-relevant group activities or, who in the absence of a designated leader, automatically performs these functions in the group" (Fiedler, 1964, p. 153).	An important point in this definition is that the determination of the *leader* is identified by the individual who demonstrates the most influence in task-relevant groups.
Effectiveness	"…group's performance on its assigned task" (Fiedler, 1964, p. 153).	Therefore, task-relevant skills and abilities of group members were either assumed to be similar or controlled experimentally or statistically.

Note. Adapted from "A contingency model leadership effectiveness," by Fred E. Fielder, 1964, *Advances in Experimental Social Psychology,* p. 152-153.

In brief, defining the key terminology was critical for the success of the program.

The next section will review the research program.

Fiedler's research program.

Fiedler (1964) initiated his leadership research program in 1951. The main purpose of the research program was to develop a general theoretical framework in which all of the available findings could be explained. Fiedler hypothesized that the leader's perceptions of coworkers would reflect how he/she influenced group interaction and performance. Fiedler's findings generally supported his hypothesis. Most of the results yielded strong positive correlates between the leader's interpersonal score and group performance. However, some results indicated a strong negative relationship between the leader's interpersonal score and group performance.

The interpersonal measure was originally developed for predicting psychotherapeutic relations. Interestingly, data have supported that effective therapy resulted when therapists viewed their client as more similar to themselves. Thus, it was hypothesized that people tend to like those who they feel are more similar to themselves; a study conducted by Fiedler, Warrington, and Blaisdell (as cited in Fielder, 1964) found supportive evidence for this hypothesis. The ultimate question was whether interpersonal attitudes were associated with group performance (Fiedler, 1964).

Predictors: ASo and LPC.

The two instruments developed to measure leadership effectiveness were the "assumed similarity between opposites" (ASo) and the esteem for the LPC scales (Fiedler, 1964). Interestingly, scores on the ASo and LPC are highly correlated (between .70 and .93); and both are vital to the theoretical model.

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Assumed similarity between opposites.

The ASo measures the perceptions of the most preferred coworker (MPC) and the least preferred coworker on three dimensions (i.e., pleasantness, friendliness, and rejecting) using an eight point rating scale (e.g., 8 for pleasant and 1 for unpleasant). The ratings for both MPC and LPC scale items are totaled and the difference between the two totals are computed. Those with a low difference score measure high on the ASo and those with high difference scores measure low on the ASo. The rationale behind the ASo scores is that those with a low difference score rated their LPC and MPC similarly and, thus, perceived them similarly. Those with a high difference score rated their LPC and MPC differently and, thus, perceive them to be different (Fiedler, 1964).

Least preferred co-worker.

The LPC is one of the two components of the ASo and can be computed by summing the total ratings of the items (e.g., pleasantness, friendliness, rejecting) from the ASo measure. A high score on the LPC indicates that the individual perceives the least preferred coworker favorably. A low score on the LPC indicates that the individual perceives the least preferred coworker unfavorably (Fiedler, 1964). According to Fiedler and Chemers (1974), the LPC only takes a few minutes to complete and produces reliable information. Later research typically only used the LPC scale to measure leader's attitudes because the LPC and ASo correlate strongly (Fiedler, 1967).

According to Hawkins (as cited in Fiedler, 1964), a low score on the ASo indicates that the individual is more likely to be task-oriented, whereas a high score on the ASo indicates that the individual is more likely to be relations-oriented. A study on group interactions provided supportive evidence for this interpretation (Fiedler, 1964).

On one hand, leaders with high LPC scores were less directive, more compliant, produced less anxiety among group members, and were more relaxed. On the other hand, leaders with low LPC scores were less tolerant of irrelevant comments, provided fewer irrelevant comments, demanded more participation from group members, were more likely to interrupt group members, and received and made more negative statements.

Studies Predating Fiedler's Model

The following studies were conducted prior to the development of Fiedler's contingency model. The studies deserve mention because the findings were crucial in the development of the model.

Two previous studies found a strong negative relationship between team performance and the leader's ASo score, which is contrary to what was originally hypothesized (Fiedler, 1964). The researchers anticipated that team performance would be more effective with a more psychologically close leader than a distant one. In the first study, high school basketball teams were measured for effective team performance by the number of accrued wins by mid-season. The team performance measure was correlated with leadership measured by the sociometric preference questionnaire. According to the findings, the most effective (most wins by mid-season) team performance was associated with team leaders who were controlling and psychologically distant ($r = -.69$). The results from this study were validated by comparing the top seven teams with the five worst teams ($r_{p.b.} = -.58$).

In the second study, Fiedler cross-validated the findings from the basketball study by examining student's accuracy of measuring predetermined parcels of land (as cited in Fiedler, 1964). The effectiveness of each team of students was determined by the course

instructors. The team scores were correlated with the team leader's ASo score and were found to be negatively related ($r = -.51$). The strong correlates indicated that ASo scores are important in the prediction of team performance.

Further research was conducted to determine whether teams with effective performance appointed leaders with low ASo scores or if the leader with low ASo scores promoted more effective team performance. This was partly determined by Fiedler's research on B-29 bomber crews and army tank crews (as cited in Fiedler, 1964). The results of the two studies revealed a significant relationship only if the leader was ranked as the most sociometrically chosen team member. On one hand, the correlations were negative when the leader sociometrically endorsed his team members. On the other hand, the correlations were positive if the leader sociometrically rejected his team members. Thus, the findings indicate a relationship of ASo scores and effective team performance that is moderated by sociometric choice patterns. This interpretation was later supported in studies by Hutchins and Fiedler (as cited in Fiedler, 1964); Havron, Lybrand, Cohen, Kassenbaum, and McGrath (as cited in Fiedler, 1964) and Godfrey, Fiedler, and Hall (as cited in Fiedler, 1964) conducted research that solidified the importance of the moderator variables. The latter study provided supportive evidence for sociometric choice patterns in that effective leadership could be predicted with ASo and LPC scores contingent upon the degree of favorable interpersonal relationship between the leader and the team members. Moreover, the effectiveness of leadership was influenced by the direction of the relationship of the leader and group members and the nature of the task. An extension of Godfrey et al.'s research found additional support for the finding that association of the direction of the relationship between the leader ASo and LPC score and team

performance is contingent upon the relation with team members. Gerard (as cited in Fiedler, 1964) and Anderson and Fiedler (as cited in Fiedler, 1964) found supportive evidence that position power also influenced effective leadership and team performance due to the differences in leader behavior for the different levels of position power.

In brief, this section discussed the history of Fiedler's research program, which included the development of predictor instruments (ASo, LPC) and the previous research that led to the development of the model. The next section will review the development of the model.

Development of Fiedler's model.

The results of the previous findings, taken as a whole, indicate that effective leadership is contingent upon the situation. In the development of the contingency model, Fiedler considered factors that are favorable and unfavorable to effective leadership. The model utilizes three situational factors that affect effective leadership: affective leader-group relations, task structure, and position power. These dimensions of the leadership model are described in the following sections.

Situational components.

Affective leader-group relation.

The interpersonal relationship of the leader with the team is arguably the most important factor in the determination of effective leadership (Fiedler, 1964). Good relations with team members can promote more compliance without formal power than can poor relations with the team members. Moreover, sociometrically accepted leaders are significantly more effective in promoting a higher degree of team performance than

are unaccepted leaders. Leader-group relations is measured with a sociometric preference questionnaire.

Task structure.

Task structure describes the degree of task clarity or ambiguity. Tasks are generally assigned "from above." These tasks can be dichotomized as either ambiguous, vague tasks or as highly programmed, structured tasks. A leader's job is easier when the task is structured and, thus, the leader is placed in a position of supervision. In contrast, when the job is unstructured, such as a planning committee, the leader is hardly in a position to wield orders, even when the leader has formal power (Fiedler, 1964).

Task structure is operationally defined by four dimensions which Shaw (as cited in Fiedler, 1964) developed. *Decision verifiability*, the first dimension, is defined as the degree to which the correctness of a decision can be determined by logical procedures or feedback. *Goal clarity*, the second dimension, is defined as the degree task requirements are made known to the team. *Goal path multiplicity*, the third dimension, is defined as the degree of varying approaches to reach a solution. *Solution specificity*, the fourth dimension, is defined as the extent to which there is more than one acceptable solution. Each of the four dimensions are rated and a mean is then computed. Task structure is dichotomized as either structured or as unstructured.

Position power.

Position power is composed of three properties. The first property consists of the rewards and sanctions a leader officially controls. The second property is the authority the leader has over the team. The third property is the degree that the authority is supported by the organization. Interestingly, the leader's power is inversely associated

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with the team member's power. High position power can award the leader with team member compliance, even if the leader is resented by the team members. Leader position power is operationally defined with a checklist.

Task-situation dimension interrelations.

A correlational study on 35 tasks yielded findings that leader-group relations and task structure (r = .03), and leader-group relations and position power (r = -.09) are not closely related. However, task structure and position power (r = .75) yielded a much stronger relationship. This was explained by Fiedler (1964) in that leaders of teams with highly structured tasks are also given high position power (e.g., military, industrial tasks).

Group situation dimensions: the octant.

Fiedler (1964) categorized the three situational components in an eight-celled cube (see Appendix A). The hypothesis was that a group in one cell may need a different leadership style than a group in another cell. Each octant is numbered from one to eight in order of the perceived favorability to the leader. The octants were ranked by rationalizing the degree of importance of each of the three situational components. The component deemed most important was leader-group relations. The second most important component was task structure, and the third most important component was position power. A situation that was deemed most favorable would have good leader-group relations, highly structured tasks, and high position power. A situation that was deemed least favorable to the leader in the original version of the model would have bad leader-relations, low structured tasks, and low position power. Thus, the hypothesis for this model was that the leader style for leadership effectiveness was contingent upon the degree of favorableness of the situation.

Octant V-A was added later and represents very poor leader-group relations. The rationale for not originally adding this octant to the model was due to not finding very poor leader-group relations in a laboratory setting. However, very poor leader-group relations do occur in the real world; thus, it was later added to the model.

In brief, this section discussed the development of the model. The model included the three situational components (leader-group relations, task structure, and position power) and the categorization of these components into octants. The next section will discuss the empirical evidence to support the model.

Empirical evidence to support Fiedler's model.

The teams in all of the studies were categorized into the irrespective octant. Validation support is also presented in the Table 2. The correlations of the ASo and LPC score for each leader and team performance are plotted to demonstrate the variability for the octants.

Fiedler (1964) plotted the median correlations of the ASo/LPC score and team effectiveness along a continuum called "advantage-for-the-leader." The scatter plot produced an inverted "U" shaped pattern, which indicated that leaders who score low on LPC are most effective in highly favorable and highly unfavorable situations. Leaders who score high on the LPC are most effective in moderately favorable and moderately unfavorable situations (see Table 2). Fiedler credited leader-group relations and task structure as powerful moderator variables that determine situational favorableness.

Table 2.

Median Correlations between Leader LPC and Group Performance in Various Octants

	Leader-member relations	Task structure	Position power	Median correlation	Number of relations included in median-
Octant I	Good	Structured	Strong	-.52	8
Octant II	Good	Structured	Weak	-.58	3
Octant III	Good	Unstructured	Strong	-.41	4
Octant IV	Good	Unstructured	Weak	.47	10
Octant V	Mod. poor	Structured	Strong	.42	6
Octant VI	Mod. poor	Structured	Weak		0
Octant VII	Mod. poor	Unstructured	Strong	.05	10
Octant VIII	Mod. poor	Unstructured	Weak	-.43	12
Octant V-A	Very poor	Structured	Strong	-.67	1

Note. Adapted from "A contingency model leadership effectiveness," by Fred E. Fielder, 1964, *Advances in Experimental Social Psychology,* p. 176.

Multiple regression was employed in an attempt to cast predictions (Fiedler, 1964). The predictors that were tested were the three situational components: position power (PP), task structure (TS), and leader-member relations (R) and the four interactions (PP X TS, PP X R, TS X R, and TS X R X PP). The criterion was the correlation between LPC score and team performance. Correlations used for the multiple regression analysis were 68 cases from the previous studies. The analysis found that two interactions (PP X R and TS X R) were significant, as well as the three way interaction (PP X TS X R). Fiedler proposed the reason for the significant three way interaction was a suppressor variable. The large beta that resulted from this interaction was primarily due to its strong relationship with some of the other variables.

Hovey (1974) conducted a study of Octant II and VIII. Octant II refers to the situational components of high task structure, low position power and high leader-group relations. Octant VIII refers to low situational components for all three dimensions.

Hovey found supportive evidence for the model in that the data were in the direction the model hypothesized; that is, leaders with low LPC scores were more effective.

Hill (1969) administered a questionnaire survey in a hospital setting to test Octant III and VII. Hill found supportive evidence as data were consistent with what the model predicted; that is, leaders with low LPC scores were more effective.

In brief, studies have demonstrated empirical evidence in support of Fiedler's leadership model. The next section will discuss validation of the model.

Validation of Fiedler's model.

Fiedler (1964) re-analyzed data from the previously cited studies to validate the model. To reiterate, leader-group relations were considered the most important component in determining situational favorability. In testing the model in the real world, leader-group relations should vary while task structure and position power should remain constant. According to the hypotheses, low LPC scores should negatively correlate with group performance in highly favorable and highly unfavorable situations; high LPC should positively correlate with group performance in moderately unfavorable situations.

Fiedler (1964) re-analyzed the data from the B-52 bomber study and cross-validated it with a new study of anti-aircraft artillery crews. As Fiedler expected, the findings from the latter study supported the results of the former study. Another study of a farm-supply cooperative organization was conducted to further assess the validity of the model. This study additionally supported the model.

Hawkins (as cited in Fiedler, 1964) conducted three studies that supported the model. The first study involved two-man teams from Octant II. Hawkins found that the teams with low ASo scores yielded better performance. The second study involved

situational components that were believed from Octant I. Hawkins found that the low ASo leaders were rated most effective. The third study involved a gasoline service station chain and, again, the situational components in this study were believed to fall into Octant I. This study also supported the model in that low ASo leaders were more effective.

In brief, several studies have provided evidence in support of the validity of the model. The next section will discuss several limitations and criticisms of the model.

Criticisms of the model.

Mitchell, Biglan, Oncken, and Fiedler (1970) voiced an obvious criticism of the model, that the leader-group relations and position power did not use a good cut-off point to separate good leader-group relations from poor leader-group relations and high position power from low position power. Mitchell et al. noted that using the median score for the position power cut-off score introduced issues because the median score is likely to shift from study to study. Another problem associated with the power position scale Fiedler proposed is that some studies did not use this scale. Fiedler (as cited in Mitchell et al., 1970) reported a reliability coefficient of 0.70 for the LPC scale. However, a different study reported a test-retest reliability coefficient as low as 0.31. Thus, LPC reliability remains in question.

Another critique by Mitchell et al. (1970) concerned the prediction confidence in the Octant III. This concern is due to the wide range of correlations in this octant (-.72 to .84). The authors suggested that the classification needed to be improved.

Few studies have actually tested the model as a whole, measuring groups in all eight octants (Mitchell et al., 1970). One study conducted by Fiedler (as cited in Mitchell

et al., 1970) which did test the model as a whole found evidence that was not supportive of the model.

Graen, Alvares, Orris, and Martella (as cited in Mitchell et al., 1970) criticized the statistical procedure used to test the significance of the correlations of each octant. Graen et al. argued that the correlations are only significantly different from zero when testing the total pattern of correlations. When testing the correlations in each octant individually, only a few are significantly different from zero.

The basic hypothesis of Fiedler's model implies that a research strategy was performed that consisted of partitioning groups on different variables until significant results were achieved (Mitchell et al., 1970). This strategy is problematic and not recommended for use because it can inevitably lead to the rejection of the null hypothesis due to systematic treatment of the data. In other words, it can lead to a false positive.

Scores on the LPC scale have been scrutinized since the 1950s (Mitchell et al., 1970). As mentioned above, high LPC scores indicate a more relation-oriented leadership style whereas low LPC scores indicated a more task-oriented leadership style. Studies by Steiner (as cited in Mitchell et al., 1970) found that individuals with low LPC scores demonstrated more expansiveness on three social distance measures and were less extra-punitive than individuals with high LPC scores. Thus, uncertainty persisted regarding what the LPC actually measures (Bass & Bass, 2008).

The favorableness dimension in the model poses several validity issues. First, the measure of leader-group relations has face-validity; however, it does not have good convergent validity (Mitchell et al., 1970). Second, the construct validity is not fully established because of the lack of convergent validity; thus, an alternate explanation is

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plausible (i.e., situation complexity). Rice and Kastenbaum (1983) suggested the need for the development of a systematic measure of situational favorableness due to its centrality to the model. Not having a systematic measure of situational favorableness available is problematic and, thus, researchers have not been consistent in measuring this construct (e.g., some researchers have used subjective measures of situational favorableness). Additionally, Rice and Kastenbaum took issue with the use of the original data from which the model was derived to test the validity of the model.

The issue relating to the contingent relationship of the model concerns the use of a more simplistic model proposed by Fielder called the three zone version (see Appendix B). Rice and Kastenbaum (1983) promoted the use of the three zone version as it is less method-bound and provides more utility to organizations. However, some researchers continue to use the older version of the model, which continues several issues that the three zone version eliminates.

Northouse (2010) argued that a major criticism of the contingency model is that it fails to explain what organizations should do in the case of a leader mismatch. Because the theory is one of personality traits, teaching leaders to adapt their style is inconsistent with the theory. Therefore, the theory advocates the manipulation of the situation to better fit the leader's style. However, the model fails to provide directions as how to manipulate the situation.

In brief, several limitations and criticisms of the model have been identified. The next section will provide a more in-depth discussion on the Least Preferred Co-Worker scale, including its psychometric properties.

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The Least Preferred Co-Worker Scale

The succeeding subsections discuss the description of the Least Preferred Coworker (LPC) scale. Topics discussed include what the LPC measures, how the scale was developed, and how to interpret the LPC score.

What does LPC measure?.

The Least Preferred Coworker instrument measures an individual's perceived interpersonal relations with coworkers. More specifically, LPC is an index of behavioral preferences, or a motivational hierarchy, which specifies individual goals (Fiedler & Chemers, 1974).

The LPC instrument requires respondents to think of the least preferred coworker with whom they have ever worked. The least preferred coworker is defined as the person with whom it was most difficult to work with to accomplish the job. The respondents then rate the least preferred coworker on a list of bi-polar semantic differential adjectives which describe personality attributes. Below is an example of three items.

Pleasant :--8--:--7--:--6--:--5--:--4--:--3--:-2--:--1--: Unpleasant

Friendly :--8--:--7--:--6--:--5--:--4--:--3--:-2--:--1--: Unfriendly

Agreeable:--8--:--7--:--6--:--5--:--4--:--3--:-2--:--1--: Disagreeable

Other items on the LPC instrument include: rejecting—accepting, tense—relaxed, distant—close, cold—warm, supportive—hostile, boring—interesting, quarrelsome—harmonious, gloomy—cheerful, open—closed, backbiting—loyal, untrustworthy—trustworthy, considerate—inconsiderate, nasty—nice, insincere—sincere, and kind—unkind.

The adjective that resembles a more favorable personality is weighted higher (8) and the semantically polar opposite is weighted lower (1). The respondent's LPC score is calculated by summing the ratings for each item. High LPC scores infer that the respondent is a relation-oriented leader. Low LPC scores infer that the respondent is a task-oriented leader. Thus, relation-oriented leaders perceive their least preferred coworker more favorably than do task-oriented leaders.

Instrument development.

Fiedler (1964) began the development of measuring interpersonal relations because of his interest in successful psychotherapy. More specifically, he wanted to find what made the difference between successful psychotherapists and unsuccessful psychotherapists. Through this research, he developed a measure of "assumed similarity between opposites" (ASo). This instrument was developed because Fiedler found that psychotherapists who perceive themselves as similar to their patients were more successful than psychotherapists who perceive themselves as different. The ASo instrument measures two dimensions of an individual: (1) the individual's perception of similarity with their "most preferred coworker" (MPC) and (2) the individual's perception of similarity with their least preferred coworker.

Fiedler extended his research and the use of the ASo to assess the effectiveness of leader and group performance. The ASo was believed to assess leadership style (i.e., relation-oriented, task-oriented). Later research abandoned the use the MPC section of the ASo due to its strong correlations with the LPC scale ($r = .70 - .93$; Fielder, 1964); however, researchers continued the use of the LPC scale.

Interpretation of the scale.

The most recent interpretation of the LPC scale by Fiedler (as cited in Rice, 1979) is also the most complex. He proposed that the LPC instrument measures a hierarchy of motives. Moreover, the primary and secondary motives of high- and low- LPC scores mirror each other. For example, the motives of those with high LPC scores are primarily for interpersonal success and secondarily for task success. The motives of those with low LPC scores are primarily for task success and secondarily for interpersonal success.

Interestingly, Fiedler had proposed three different interpretations of the LPC scale prior to the hierarchy of motives. Those interpretations concerned the measurement of social distance, personal needs, and cognitive complexity.

Psychometric properties.

The subsequent sections discuss the following psychometric properties of the LPC scale: normative data; reliability, which includes internal consistency, test-retest, and parallel form equivalence; and validity, which includes content validity and construct validity.

Normative data.

Normative data are scarce since the LPC instrument has a range of items in different versions. The number of items can range from 16 to 25. Rice (1978a) reported reliability coefficients for a 12-item LPC scale. To bypass the issue of scales with different number of items, individual item level descriptive data have been reported. Fiedler (1967) reported normative data from a study that involved 320 participants. The mean item scores ranged from 3.19 to 4.13 (the mean total score for an 18 item scale would thus range from 57.42 to 74.34). The mean of all LPC scores was 3.32 and the

standard deviation was 1.39. The low LPC scores ranged from 1.2 to 2.2 (the mean total

score for an 18 item scale would range from 21.6 to 39.6); while the high LPC scores

ranged from 4.1 to 5.7 (the mean total score for an 18 item scale would range from 73.8

to 102.6). The mean low LPC score reported was 1.8 (*SD* = .43) and the mean high LPC

score reported was 4.9 (*SD* = .82; the mean total for an 18 item scale for a low LPC score

would be 32.4 and for a high LPC score would be 88.2).

Reliability.

Next the internal consistency, test-retest, and parallel form equivalence reliability

are discussed.

Internal consistency.

The original LPC instrument contained 16 items and produced a mean split-half

correlation coefficient of .88 (Bass & Bass, 2008). Rice (as cited in Bass & Bass, 2008)

found split-half coefficients that ranged from .79 to .91 using an 18 item LPC scale. In

another review of the internal consistency using a 22 item LPC scale, Rice (1978a) found

a coefficient alpha of .91. Interestingly, Rice reported split-half coefficients of .79, .84,

and .89 for a 12 item LPC scale.

Test-retest.

Test-retest coefficients range from .01 to .92 (see Appendix C for table with the

test-retest reliability coefficients; Rice, 1978b). The mean test-retest coefficient is .67 and

the median is .64; the median coefficient is at the eight week interval. The test-retest

coefficient of .01 indicated that the LPC has poor stability when tested at a one year

interval (Schriesheim, Bannister, & Money, 1979).

Parallel form equivalence.

Two variations of the LPC scale, which differed in content and format, correlated fairly strong (.66, .78, and .79; Rice, 1979). However, true alternate forms of the LPC scale have never been created or tested (Schriesheim et al., 1979).

Validity.

The content validity and the construct validity of the LPC scale are discussed below.

Content validity.

Studies conducted by Shiflett (1974) and by Yukl (1970) have demonstrated that the LPC measures two factors: one related to interpersonal relations and one related to task-orientation. A problem associated with other measures of personality is that they additionally measure social desirability; the LPC instrument appears to be free from this contamination (Fiedler, 1967; Schriesheim, 1979).

Construct validity.

Fiedler and Chemers (1974) attempted to correlate LPC with existing valid measures of personality traits and behavior observation scores to find similarities; however, the researchers found no measure that converged with LPC scores. LPC has been criticized by many researchers due to its lack of convergent validity (Bass & Bass, 2008; Rice, 1979; Schriesheim et al., 1979).

Scale usage.

The LPC instrument has been widely used in research and organizational settings. Fiedler's contingency model of leadership, which requires the use of the LPC, is one of the most researched contingency models of leadership. Research has been conducted

using the LPC since it was first developed over 40 years ago. Fiedler and associates have tested his model of leadership in many different organizational settings including: steel industry, military, farm supply cooperatives, and in laboratory settings.

More recent research has utilized the LPC instrument to contrast differences in rater biases toward the least preferred coworker among relation-oriented and task-oriented managers (Hare, Hare, & Blumberg, 1998). Interestingly, Hare et al. found that both relation-oriented and task-oriented managers gave their least preferred co-worker low ratings.

The LPC is a practical instrument for managers and researchers to utilize because of its simplistic nature. Given the instruments practicality, the LPC is likely to be a prominent instrument in future research. Additionally, the lack of strong validity is a major issue for the LPC and should generate more research investigating this problem.

In brief, the above section discussed the description and the psychometric properties of the LPC scale. The next section will discuss instruction research, specifically the importance of standard administration.

Instruction Research

A test must be administered and scored as the developer intended to maintain the usefulness and interpretability of the test (American Educational Research Association [AERA], American Psychological Association, & National Council on Measurement in Education, 1999). Additionally, instructions must be standardized across administrations for the test to be standardized (AERA et al., 1999). When a test is administered the same way each time, the test is said to be standardized. Tests that are not standardized have lower reliability, accuracy, and comparability of scores. However, instructions for the

LPC vary across scales in textbooks and in those found on the Internet. The original

instructions developed by Fiedler are as follows:

> 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.

Moreover, Fiedler provided information before the instructions that describes a

brief rationale for the LPC scale and additional instructions concerning the appropriate

method for marking responses on the instrument (see Appendix D; Fiedler, personal

communication, November 25, 2011). In reviewing the different instructions found on the

Internet and in textbooks, those instructions closest to the original instructions typically

use only the original instructions without the additional information before the

instructions (see Appendix E). However, there are a few LPC scales in the literature that

includes the original instructions and the additional information (Dubrin, 2010), though

the additional information is not identical to that given by Fiedler. Thus, the concerns

pertaining to the nonstandardization of instructions still exist.

There are several other LPC scales that can be found throughout textbooks and on

the Internet that have different instructions. Below is an example of instructions that

differ from Fiedler's original instructions that were found on the Internet.

> Think of all the different people with whom you have ever worked . . . in jobs, in social clubs, in student projects, or whatever. Next think of the ***one person*** with whom you could work least well, that is, the person with whom you had the most difficulty getting a job done. This is the one person (a peer, boss, or subordinate) with whom you would least want to work. Describe this person by circling numbers at the appropriate points on each of the following pairs of bipolar adjectives. Work rapidly. There are no right or wrong answers ("Introducing Management," 2006).

Below is another example of instructions that differ from Fielder's original instructions that were found in a textbook. The authors of the textbook refer to the scale and provide a description of the scale's instructions (Hughs, Ginnett, & Curphy, 2009, p. 591).

> The scale instructs a leader to think of the single individual with whom he has had the greatest difficulty working (i.e., the least-preferred co-worker) and then to describe that individual in terms of a series of bipolar adjectives (e.g., friendly-unfriendly, boring-interesting, sincere-insincere).

Another textbook that references the LPC scale provides the scale for self-assessment purposes and provides information on how to score the responses; however, the scale does not include scale instructions (Hackman & Johnson, 2004).

A brief review of the literature on Fiedler's LPC scale provides evidence of the lack of standardization across instructions. The tendency not to use Fielder's original instructions is a direct violation of the *Standards for Educational and Psychological Testing*, specifically Standard 5.1 and Standard 5.5. Standard 5.1 states that "Test administrators should follow carefully the standardized procedures for administration and scoring specified by the test developer, unless the situation or a test taker's disability dictates that an exception should be made" (AERA, 1999, p. 63). The violation of Standard 5.1 is the failure to use standardized procedure for administration. This violation occurs when instructions deviate from the original instructions developed by Fiedler.

Standard 5.5 states that,

> Instructions to test takers should clearly indicate how to make responses. Instructions should also be given in the use of any equipment likely to be unfamiliar to test takers. Opportunity to practice responding should be given when equipment is involved, unless use of the equipment is being assessed" (AERA, 1999, p. 63).

The violation of Standard 5.5 occurs when the instructions do not include the additional information included in Fiedler's original instructions that provides detailed instructions on the correct procedure for responding to each item.

These violations to the standardization of the instructions for the LPC scale may reduce the accuracy and comparability of scores. Moreover, inaccurate scores are likely to reduce test-retest reliability which, in turn, can reduce the validity of the scale and the theory.

Current Study

Mitchell (1970) presented the LPC scale to 119 participants. The researcher asked each participant whether they had thought of an imaginary person or a real person when they responded to the scale. The researcher reported that of those participants who received low scores (task-oriented), 42 percent were thinking of a real person. Of those participants who received high scores (relation-oriented), 83 percent were thinking of a real person. Thus, it appears that those who identify an actual person as their LPC are more likely to have high LPC scores.

> *Hypothesis 1: Responses to LPC instructions referring to a specific person will be more favorable (higher LPC score) than will those responses to LPC instructions referring to a general person (lower LPC score).*

Stinson and Tracy (1974) found scores on the LPC scale were slightly more stable when the respondent thought of a general person than scores when the respondent thought of a specific person. Moreover, the researchers found that scores were unstable when the respondent thought of a different specific person at Time 1 than they did at Time 2.

Hypothesis 2: Responses to LPC instructions referring to a general person will yield a greater test-retest reliability coefficient than will responses to LPC instructions referring to a specific person.

Stinson and Tracy's (1974) research reported that there were smaller differences between scores across time when the respondent thought of a general person than when the respondent thought of a specific person. Moreover, scores with smaller differences are less likely to move across classifications.

Hypothesis 3: Scores to LPC instructions referring to a general person will be more consistent (less likely to move from one classification to another classification, e.g., low score to middle score) than will scores to LPC instructions referring to a specific person.

Method

Participants

Participants consisted of undergraduate students participating in a leadership course or an introductory to psychology course at a mid-western university (first administration, N = 300; second administration, N = 213). One hundred seventy-three females, 124 males, and 3 that were unidentified participated in this study. The sample included 79.8% white/Caucasian, 12.8% black/African American, 2.4% Middle Eastern, 1.3% Asian, .7% Hispanic/Chicano/Latino, .3% American Indian/Alaskan Native/Aleut, and 2.7% other. Forty-seven percent of the participants had less than one year of college education; 35.2% had one or more years of college education but no college degree. Thirty-one percent of the participants were employed for wages, 14% worked on family

farms for no wages, and 55% were students only. The average hours worked per week

ranged from 0 to 50 hours (M = 10, SD = 12.35).

Instrument

Two instruments were used to test the hypotheses. One instrument was the LPC

scale with Fielder's original instructions without the additional information, as

instructions without this information are most commonly used in practice (Specific LPC;

the pronoun "she" has been added to the version of the instructions which is most

commonly found in practice). Below are the instructions that were used for the Specific

LPC scale (see Appendix F for actual scale).

> Think of the person *with whom you can work least well.* He/she may be someone
> you work with now, or he/she may be someone you knew in the past. He/she 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/she
> appears to you.

The other instrument was the LPC scale with instructions almost identical to

Fiedler's original instructions with one exception. The revised set of instructions

instructed the respondent to think of a general, fictitious least preferred co-worker instead

of a specific person (General LPC). Below are the General LPC scale instructions (see

Appendix G for actual scale).

> Think of people *with whom you can work least well.* These people do not have to
> be based on people you like least well, but should be based on people with whom
> you have the most difficulty in getting a job done. Describe this type of person as
> he/she appears to you.

Demographic items also were administered to gather general information,

including previous and current work history and experience (please see Appendix H).

Procedure

I recruited participants in leadership studies courses and introductory to psychology courses. I distributed the LPC scale to the participants. Each participant completed either the General or Specific LPC scales; the LPC scales had different instructions. The demographic items also were administered during the first administration. Participants were randomly assigned to different LPC scales within each class. Each participant was asked to write a number that only he/she could identify (i.e., the last 5-digits of the student's university "800" ID number). This number was used to match participants on the LPC scale during the second administration. The identifying number on the LPC scale from the first administration was transferred over to a blank LPC scale for the second administration. All numbers were grouped by the class in which they were gathered so that during the second administration I could distribute the scales and ask the participants to find the form with their identifying 5-digit number. See Appendix I for the script used to administer the LPC scales.

The second administration occurred seven weeks after the first administration to test the stability of the responses (i.e., test-retest reliability) and to determine LPC category shifting. The seven week interval coincides with most of the current research that has tested the stability of the LPC scale has conducted the second administration during a similar interval. Participants took approximately 10 minutes to complete the LPC scale and demographic items during the first administration and 5 minutes to complete only the LPC scale during the second administration.

Scores were summed for each participant to determine leadership style (i.e., task-oriented, relations-oriented, and undefined). The cut-off score for determining leadership

style was based on the scoring instructions of Fiedler and Chemers (1974). Accordingly, 53 and below were considered task-oriented, 64 and above were considered relations-oriented, and scores between 53 and 64 were considered undefined.

Results

Hypothesis 1

An independent samples t-test was conducted to compare first administration scores on the General LPC to scores on the Specific LPC. There was a significant difference between scores on the General LPC ($M = 59.95$, $SD = 25.46$) and the Specific LPC ($M = 67.41$, $SD = 21.66$); $t(291) = -2.705$, $p = .007$. These results suggest that directions affect responses on the LPC. Specifically, the results suggest that those responding to instructions (General LPC) prompting the participant to think of a generalized person are more likely to rate their LPC more critically than those responding to instructions (Specific LPC) prompting the participant to think of a specific person. This finding supports Hypothesis 1.

Hypothesis 2

The reliability of the LPC was evaluated with data from 101 participants who responded to the General LPC and 112 participants who responded to the Specific LPC. Both forms were administered two times with the test-retest interval of 7 weeks. The stability coefficient for the General LPC was .537 and for the Specific LPC was .525. To test whether there was a significant difference between the stability of the two forms, the coefficients were transformed into z-scores; General LPC, r = .537, $z = .600$; Specific LPC, r = .525, $z = .583$. This transformation yielded a nonsignificant difference between the two z-scores; $z = .12$, $p = .452$; thus, failing to support Hypothesis 2.

Hypothesis 3

A Chi-Square test was used to test for categorical shifts in both forms of the LPC scale. Scores were categorized as being task-oriented, relations-oriented, or undefined. A LPC category that remained the same for the first and second administration was considered to be "consistent." A LPC category that changed from any category to any other category was considered to be "changed." Table 3 presents the results of the chi-square analysis. The chi-square test revealed a nonsignificant difference; $\chi^2(1, N = 213) = 1.72$, $p = .190$. The rates of shifting from one LPC score to another were equivalent for the General LPC and the Specific LPC instructions, failing to support Hypothesis 3.

Table 3.
Distribution of Participants that Shifted Categories from First Administration to Second Administration by General and Specific LPC

	Category Shifts	
Form	Consistent	Changed
General	70	31
Specific	68	44

Note. Consistent = scores that resulted in the same LPC category in Time 1 and Time 2; Changed = scores that resulted in a different LPC category in Time 1 and Time 2.

Discussion

The present data supported Hypothesis 1 that responses from the General LPC would yield more critical responses than would those responses from the Specific LPC. In other words, those participants who responded to instructions (General LPC) prompting them to think of a generalized person as their LPC were more critical in their description of the LPC. Thus, on average, participants who responded to General LPC instructions yielded lower LPC scores than did participants who responded to Specific LPC instructions. One explanation for this difference is that participants who responded to the Specific LPC were prompted to think of a specific person as their LPC. Thus, it is

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likely that the participant would score the specific person low on some of the items but not all of the items as most people, even a least preferred coworker, have some positive attributes. In contrast, participants who responded to the General LPC were prompted to think of a generalized person as their LPC. It is plausible that these participants conceptualized a LPC who would score low on most, if not all, of the items. This explanation provides a plausible and probable explanation for the differences in responses between the General LPC and the Specific LPC.

The results for Hypothesis 1 provided supportive evidence that slight direction modifications can significantly change the outcome of responses. This means that test administrators should maintain the integrity of the directions that were developed specifically for the test by the original test developers as per Standard 5.1 and Standard 5.5 of the *Standards for Educational and Psychological Testing*. Generally, psychometric data are collected and analyzed using the original directions. These data report the norms, reliability, and validity of the test. Changing the original instructions, even slightly, may harm the integrity of the test and psychometric data may become uninterpretable.

The results for Hypothesis 1 indicate that changing the referent to a generalized person decreased the likelihood of participants scoring high on the LPC. Accordingly, a major concern is the variation of the LPC instructions throughout textbooks (e.g., Dubrin, 2010; Hackman & Johnson, 2004; Hughs et al., 2009). Students learning from these textbooks may have an altered understanding of the interpretation of the LPC scale depending upon whether the original instructions or a variation were used in the classroom. If a variation of the instructions were learned, the interpretation of the score may be incorrect. The results for Hypothesis 1 show that, when compared to LPC scores

from the original instructions, scores from the General LPC were much lower. This resulted in more participants who responded to the General LPC (77 participants) being classified as task-oriented than those who responded to the Specific LPC (51 participants). It is likely that some of the General LPC participants would have scored higher under Fiedler's original Specific LPC instructions. Likewise, students who would respond to a LPC scale with instructions that differ from Fiedler's original instructions may score differently and be categorized differently than if the original instructions were used. For example, a student may be categorized as a relations-oriented leader by responding to the original instructions but may be categorized as undefined or a task-oriented leader by responding to a variation of the original instructions. Similarly, cutoff scores that are used to interpret the meaning of the LPC scores are incorrect when using LPC instructions that are different from Fiedler's original instructions. In addition, responding to a LPC scale with different instructions can interfere with the student's capacity to understand their own leadership style. It is important that students, professors, and practitioners use the original instructions. Moreover, it is important that they know the results of this study as supportive evidence that changes in directions can impact the interpretation of scores.

The present data did not support Hypothesis 2 that General LPC would yield more stable responses than Specific LPC. The two stability coefficients for General LPC and Specific LPC are statistically equivalent. Furthermore, the stability coefficients yielded from this study are low by the standards in the field of industrial-organizational psychology.

Interestingly, Fiedler (1967) claimed that 'the stability of…LPC scores depends to a considerable degree on the intervening experiences of the [participants]" (p. 48). It's unknown whether the participants experienced any interventions that would significantly change their LPC scores, but it is unlikely for such an intervention to have occurred during the seven week time interval. Another unknown variable is whether the participants were thinking of the same person, or type of person, during both administrations. In fact, it is plausible that there were participants who thought of a different person, or type of person, during the first administration than in the second administration. If participants changed referents between administrations, the reliability would be negatively affected as it is likely that two different LPCs would differ on the different attributes being assessed by the LPC instrument. Thus, changing the referent would result in a less stable scale when compared to participants who used the same referent point. In hindsight, it would have been wise to have emphasized the need to maintain the same referent during the second data collection or, at least, to have measured it.

The stability coefficients found in this study (.537 and .525) are low by the standards of industrial-organizational psychology, but are not atypical of the LPC scale. The median stability coefficient at an 8-week test-retest interval is .68 (Rice, 1978b). Moreover, Fox (1976) reported stability coefficients between .51 and .66 utilizing a similar sample demographic (undergraduates). The stability coefficients reported by Fox indicate that the stability coefficients found in this study are comparable to those found in other studies.

The present data did not support Hypothesis 3 that the number of LPC category shifts between scores at Time 1 to Time 2 would be greater for Specific LPC than General LPC. The results of the analysis indicated that 44 (39%) shifts occurred for the Specific LPC whereas only 31 (31%) shifts occurred for the General LPC. Thus, the Specific LPC had more shifts than the General LPC, however, the results of the chi-square analysis revealed that the number of shifts were statistically equivalent. Moreover, these results might be expected when taking into consideration the similarity in the stability coefficients. For example, if the stability coefficient for General LPC would have been significantly better (i.e., significantly more stable), then the result of the analysis would have likely yielded fewer shifts of scores between Time 1 and Time 2. However, since the stability coefficients were essentially the same, it is understandable to find no significant difference in the number of shifts between General LPC and Specific LPC.

Limitations

Two limitations should be recognized in this study. First, this study recruited only undergraduate students. Data from undergraduate students may be limited due to lack of work experience, although 45% of the participants had some work experience. Furthermore, these results based on undergraduates may not generalize to the general public. Second, this study utilized data that were collected from participants who may have lacked motivation. That is, the participants may not have responded to the best of their ability. Moreover, participants may not have utilized full cognitive effort during both administrations. Lack of full cognitive effort could explain why the results yielded low stability coefficients; specifically, that participants could have randomly selected

response choices. Thus, a manipulation check could have been added to determine if this occurred.

Implications

The results of this study provided supportive evidence for the effect of directions on the LPC scale. This study demonstrated that manipulating the participant's point of reference can influence responses significantly. Thus, this study provides support for the importance of standardized administration of tests; when test instructions are altered, even slightly, responses can significantly differ. The results of this study are important to anyone administrating tests with standardized instructions. It is the test administrator's responsibility to ensure that the test is administered according to the test developer's original specifications. If directions are altered, test scores may lose meaningful interpretation.

Fiedler stated that "The measure [of the LPC] is not of the co-worker but of the person completing the scale" (Fiedler, personal communication, November 25, 2011). Fiedler further explained that the original instructions should be used when responding to the LPC scale regardless of whether the respondent is thinking of a specific person or a generalized person. In brief, Fiedler's statement is consistent with the present finding that tests should be administered with the standardized instructions that were developed for the test to ensure that scores can be interpreted with the appropriate meaning.

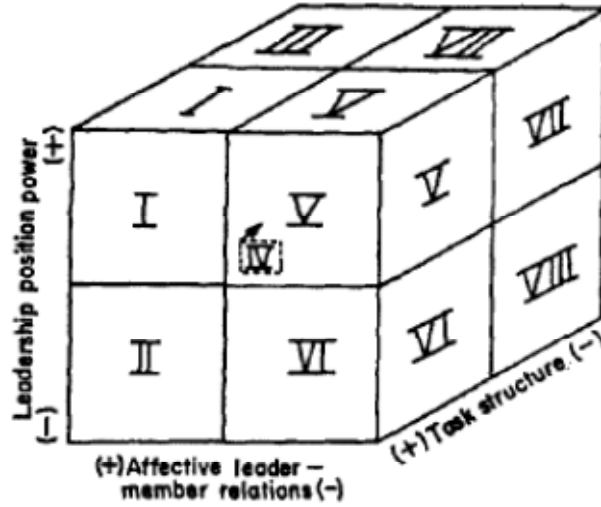FIG. 1. A model for the classification of group task situations.

Octants

When leader-member relations are	1 Good	2 Good	3 Good	4 Good	5 Poor	6 Poor	7 Poor	8 Poor
and task structure is	High	High	Low	Low	High	High	Low	Low
and position power is	Strong	Weak	Strong	Weak	Strong	Weak	Strong	Weak
	↓	↓	↓	↓	↓	↓	↓	↓
Effective group performance requires a leader motivated by	Task accomplishment (low LPC)			Good interpersonal relations (high LPC)				Task accomplishment (low LPC)

High ←   SITUATIONAL CONTROL AND INFLUENCE   → Low

Appendix C
(Rice, 1978b)

Table 3. Test-Retest Reliability of the LPC Scale

Author and Subject Population	Test-Retest Interval	Reliability Coefficient
Siefert (cited in 18) 18 management trainees	2-3 days	.92
Gruenfeld et al. (30) 126 undergraduates	4 weeks	.85
Stinson & Tracy (45) 13 industrial supervisors	8 weeks	.81
Stinson & Tracy (45) 42 undergraduates	3 weeks	.80
Siefert (cited in 18) 2 management trainees	2-3 days	.78
Fox (23) 114 tax examiners	4 weeks	.75
Stinson & Tracy (45) 24 industrial supervisors	3 weeks	.73
Bons (cited in 39) 45 military officers	8 months	.72
Reilley (cited in 23) 14 student nurses	5 months	.70
Fox (23) 61 undergraduates instructed to describe the same least preferred coworker on the two administrations of the LPC scale	9 weeks	.68
Fiedler, (13, p. 16) 562 Air Force officers in military training	8 weeks	.68[a]
Prothero & Fiedler (39) 18 university faculty members	15-18 months	.67
Fox (23) 80 undergraduates	9 weeks	.66
Drucker (cited in 15, p. 48) 54 Army recruit leaders with ROTC experience	8 weeks	.57
Fox (23) 43 undergraduates instructed to describe a different least preferred coworker on the two administrations of the LPC scale	9 weeks	.51
Stinson & Tracy (45) 30 undergraduate participants in an eight-week business game	8 weeks	.49
Drucker (cited in 15, p. 48) 32 Army recruit leaders without ROTC experience	8 weeks	.47
Stinson & Tracy (45) 47 undergraduates	8 weeks	.46
Bons, et al. (6) 350 Army officers (before and after graduation from West Point)	2 1/2 years	.45
Drucker (cited in 15, p. 48) 133 Army recruit non-leaders without ROTC experience	8 weeks	.41
Drucker (cited in 15, p. 48) 62 Army recruit non-leaders with ROTC experience	8 weeks	.31
Stinson & Tracy (45) 104 undergraduate participants in an eight-week business game	8 weeks	.23
Arbuthnot (2) 48 civil service supervisors participating in executive development workshop	1 year	.01

[a] Parallel forms of the ASo scale were administered on the first and second testing sessions. This coefficient represents consistency over time and across item content. Fiedler reported a "similar test-retest correlation" in a study of army tank crews (1967, p. 48).

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 two pages.

Below 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 :___:___:___:___|___:___:___:___: Not neat
        8   7   6   5 | 4   3   2   1

Very Quite Some- Slightly Slightly Some- Quite Very
neat neat what   neat   untidy what untidy untidy
            neat   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:

               X
Very neat :___:___:___:___|___:___:___:___: Not neat
        8   7   6   5 | 4   3   2   1

Very Quite Some- Slightly Slightly Some- Quite Very
neat neat what   neat   untidy what untidy untidy
            neat   untidy

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:

                      X
Very neat :___:___:___:___|___:___:___:___: Not neat
        8   7   6   5 | 4   3   2   1

Very Quite Some- Slightly Slightly Some- Quite Very
neat neat what   neat   untidy what untidy untidy
            neat   untidy

If you would think of him as being *very untidy*, you would use the space nearest the words Not Neat.

                                    X
Very neat :___:___:___:___|___:___:___:___: Not neat
        8   7   6   5 | 4   3   2   1

Very Quite Some- Slightly Slightly Some- Quite Very
neat neat what   neat   untidy what untidy untidy

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.

LPC

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.

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

TABLE 10.1
Least Preferred Coworker (LPC) Scale (Fiedler, 1967)

Over the course of your life you have probably worked in many groups with other people on your job, in community groups, church groups, athletic teams, etc. Some of your coworkers may have been very easy to work with in attaining the group's goal, while others were less easy to work with.

Think of the person in your life with whom you worked least well. He or she may have been someone you knew in the past or someone you work with now. The person does not have to be the person you like least well, but should be the person with whom you have the most difficulty getting the job done. In this scale you will be describing this person. You do not need to give the person's name.

Following are pairs of words which are opposite in meaning, such as "Very Neat" and "Not Neat." Between each pair of words are eight blanks to form a scale.

EXAMPLE: In describing the person with whom you least like to work, if you ordinarily think of him or her as being "Quite Neat," you would put an "X" in the space marked 7.

If you ordinarily think of this person as being only "Somewhat Neat," you would put your "X" in the space above the 6.

If you think of this person as being "Slightly Untidy," you would mark the space above the 4.

If you would think of this person as being "Very Untidy" (or not neat), you would put your "X" in space 1.

Look at the words at both ends of the line before you mark your "X." Work rapidly, your first answer is likely to be your best one (there are no right or wrong answers, though).
Please do not omit any items, and mark each item only once.

Now use the scale to describe the person with whom you find it hardest to get the job done.

Pleasant	8 : 7 : 6 : 5 : 4 : 3 : 2 : 1	Unpleasant
Friendly	8 : 7 : 6 : 5 : 4 : 3 : 2 : 1	Unfriendly
Rejecting	1 : 2 : 3 : 4 : 5 : 6 : 7 : 8	Accepting
Tense	1 : 2 : 3 : 4 : 5 : 6 : 7 : 8	Relaxed
Distant	1 : 2 : 3 : 4 : 5 : 6 : 7 : 8	Close
Cold	1 : 2 : 3 : 4 : 5 : 6 : 7 : 8	Warm
Supportive	8 : 7 : 6 : 5 : 4 : 3 : 2 : 1	Hostile
Boring	1 : 2 : 3 : 4 : 5 : 6 : 7 : 8	Interesting
Quarrelsome	1 : 2 : 3 : 4 : 5 : 6 : 7 : 8	Harmonious
Gloomy	1 : 2 : 3 : 4 : 5 : 6 : 7 : 8	Cheerful
Open	8 : 7 : 6 : 5 : 4 : 3 : 2 : 1	Guarded
Backbiting	1 : 2 : 3 : 4 : 5 : 6 : 7 : 8	Loyal
Untrustworthy	1 : 2 : 3 : 4 : 5 : 6 : 7 : 8	Trustworthy
Considerate	8 : 7 : 6 : 5 : 4 : 3 : 2 : 1	Inconsiderate
Nasty	1 : 2 : 3 : 4 : 5 : 6 : 7 : 8	Nice
Agreeable	8 : 7 : 6 : 5 : 4 : 3 : 2 : 1	Disagreeable
Insincere	1 : 2 : 3 : 4 : 5 : 6 : 7 : 8	Sincere
Kind	8 : 7 : 6 : 5 : 4 : 3 : 2 : 1	Unkind

Note: 1 = least descriptive of the Least Preferred Coworker; 8 = most descriptive of the Least Preferred Coworker.
Source: F. E. Fiedler. (1967). A theory of leadership effectiveness. New York: McGraw-Hill. Used with permission of the author.
Scores on the LPC Scale can range from 18 to 144. A score of 56 or less indicates that a person is a task-oriented leader; a score of 63 or above indicates that a person is relationship-oriented. Scores between 56 and 63 indicate that a person's leadership style cannot be determined.

Least Preferred Co-Worker scale

Write your last five (5) digits of your 800 number: _____

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/she may be someone you work with now, or he/she may be someone you knew in the past. He/she 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 by marking an "X" for each pair of words.

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

Least Preferred Co-Worker scale

Write your last five (5) digits of your 800 number: _____

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 people *with whom you can work least well* . These people do not have to be based on people you *like* least well, but should be based on people with whom you have the most difficulty in getting a job done. Describe this type of person as he/she appears to you by marking an "X" for each pair of words.

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

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Appendix H
(Demographics Questionnaire)

1. Gender: What is your sex? (Circle one). F or M
2. Age: What is your age? _____
3. Education: What is your highest or level of school you have completed? (Circle one).
   a. High school graduate
   b. Less than one year of college (<24 credit hours)
   c. One or more years of college, no degree
   d. Associate degree
   e. Bachelor's degree
   f. Master's degree
   g. Professional degree
   h. Doctorate degree
4. Employment Status: Are you currently…? (Circle one).
   a. Employed for wages (i.e., get paid)
   b. Self-employed
   c. Out of work and looking for work
   d. Out of work but not currently looking for work
   e. A homemaker
   f. A student
   g. Retired
   h. Unable to work
5. On average, how many hours a week do your work for wages (i.e., get paid)? _____
6. Employer Type: Please describe your work. (Circle one).
   a. Employee of a for-profit company or business or of an individual, for wages, salary, or commissions
   b. Employee of a not-for-profit, tax-exempt, or charitable organization
   c. Local government employee (city, county, etc.)
   d. State government employee
   e. Federal government employee
   f. Self-employed in own not-incorporated business, professional practice, or farm
   g. Self-employed in own incorporated business, professional practice, or farm
   h. Working without pay in family business or farm
7. Ethnicity: Please specify your ethnicity. (Circle one).
   a. Hispanic or Latino
   b. Not Hispanic or Latino
8. Race: Please specify your race. (Check one).
   a. _____African American/Black
   b. _____American Indian/Alaskan Native/Aleut
   c. _____Asian
   d. _____Hispanic/Chicano/Latino
   e. _____Middle Eastern
   f. _____Native Hawaiian/Other Pacific Islander
   g. _____White/Caucasian
   h. _____Other: (Please specify)_____

(Script)

Script for first administration of the questionnaire.

Hello, my name is Derrick Lottes and I am collecting data to for my thesis research, which is a requirement for my master's degree. This research involves you answering a brief questionnaire about a coworker. Participation is voluntary; you may elect not to participate or may stop at any time. I would very much appreciate your completing the questionnaire, which most students complete in approximately ten minutes. I will administer a second survey seven weeks from today and will need to match your responses on the first administration to the responses on the second administration. Therefore, I do ask for you to write a six digit id number that you will definitely remember in seven weeks. This might be the last six digits of your mother's phone number or some other number you will remember. It needs to be a number you will remember in seven weeks. If you feel you will need a prompt in seven weeks, please write that clue beside the 6-digit number in the space provided on the survey. This number will not be used to identify any individual – it will only be used to match today's responses to the responses you give in seven weeks. You should **not** write your name anywhere on the materials. We are asking for demographic information such as your sex, race, and age. That is so we can determine, for example, if males respond differently than females, older people respond differently from younger people, etc. No individual responses will be reported. Only grouped responses will be reported.

If you are willing to participate, please raise your hand and I will hand you an informed consent form. WKU requires that each individual who participates in research sign this form that indicates you understand what is involved in the research – in this case, answering a brief questionnaire today and answering another brief questionnaire in seven weeks. The WKU Human Subjects Review Board has reviewed this research and determined that any risks involved in answering the questionnaire are minimal. Please read the consent form. Then, if you agree to complete the survey, sign the form. After you sign the form, raise your hand and I will give you the questionnaire to complete. When you have completed the questionnaire, please raise your hand and I will pick it up—thank you for your help with my research!

Consent forms will be distributed and collected. Questionnaires will be distributed as consent forms are collected.

Script for 2nd administration of the questionnaire.

Hello, my name is Derrick Lottes. You may remember me from several weeks ago when you completed a brief questionnaire for my thesis research. Today, I will ask you to complete the same questionnaire a second time. Your participation is voluntary; you may elect not to participate or may stop at any time. The questionnaires are already numbered with the six digit number you identified on the first survey. Please raise your hand when I read the 6-digit number you used on the first questionnaire. If you do not remember your

number, I have a list of cue words that I can use to help you remember. When you have completed the survey, please raise your hand and I will pick-up your survey—thank you for your help with my research!

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