Achievement Motivation and Leadership Opinion

Clark

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ACHIEVEMENT MOTIVATION AND LEADERSHIP OPINION

by

John M. Clark

A Thesis
Submitted to the
Faculty of the School of Graduate
Studies in partial fulfillment
of the
Degree of Master of Arts

Western Michigan University
Kalamazoo, Michigan
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ACKNOWLEDGEMENTS

The writer wishes to thank Dr. Richard Schmidt not only for serving as an advisor for the planning and execution of this thesis, but for his patient assistance and encouragement throughout the project. Special thanks go to Dr. E. Jack Asher for his editorial criticism and help with the methodology and statistics of this study and to Dr. Frank Fatzinger for serving on the thesis committee. Special appreciation also goes to the faculty of the Department of Psychology for their training and for the financial benefits of an Assistantship, and to the introductory psychology students who participated in this study.

John M. Clark
MASTER'S THESIS

CLARK, John Maxwell

ACHIEVEMENT MOTIVATION AND LEADERSHIP OPINION.

Western Michigan University, M.A., 1968
Psychology, general

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ACHIEVEMENT MOTIVATION AND LEADERSHIP OPINION

A review of the literature by Bellows (1961) indicates that the first study of the psychology of leadership was published in 1904, but no attempt to derive quantitative data from experimental procedures was made until the 1920's. Since 1942, the studies reported in the literature which have treated the selection and performance of executive and supervisory personnel have increased by more than 1,000 per cent (Lawshe & Balma, 1966).

The replacement of the typical employee, including direct costs of processing applications and employee selection and the indirect expense of training, placement, lost productivity and organizational integration has been estimated to cost the average company over $500 (Smith, 1964). When a company must select an executive, it makes a far greater investment than when it selects a production employee or a clerk.

Scientific methods for the selection of the executive have lagged, however, for three important reasons: first, because of the concentration of test development in the areas of basic skills required by the military;

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second, because of the complexity of leadership behavior and therefore the difficulty in developing adequate and acceptable criteria of performance in this area; and finally because management, the group which controls the uses of selection procedures, has resisted the application of scientific, psychological techniques to itself (Lawshe & Balma, 1966).

Gradually, testing methods have been developed for use at all levels of management, and attempts have been made to discover the underlying characteristics required for effective leadership behavior. The results of the research, which has attempted to identify and quantify specific traits that might be universally found in successful leaders, have often been disappointing, however. Porter (1962), for example, found that the size of the company and the scores on a masculinity index of successful executives were related. In companies of less than fifty employees, the more masculine the interests of an executive, the more successful he tended to be. In contrast, the more masculine the interests of an executive in companies of 15,000 or more employees, the less successful he was likely to be.
The type of tasks facing a group, the physical setting in which the work is performed, and the expectations of subordinates also seem to affect the success of leadership behavior.

In one study, the F-scale, composed of forty statements designed to measure the level of authoritarianism (the felt importance of personal dominance and power), was administered to fifty-two supervisors. Twenty-eight of these men were in charge of truck drivers who saw their supervisors for only a few minutes each work day. The remaining twenty-four were in charge of material positioners who remained in the plant all day. An attitude questionnaire was used to measure both the drivers' and the positioners' satisfaction with supervision. The results of the questionnaire indicated that the more authoritarian the supervisor, the better the drivers liked him. In the case of the positioners, the reverse was true. The positioners preferred those supervisors who scored low on the F-scale to those who were high (Vroom and Mann, 1960).

In a review of the literature, Stogdill (1948) cited nineteen experiments pertaining to the relationship between a measure of "emotional control" and
leadership success. Eleven experiments reported that successful leaders had more control than average. Five reported that successful leaders had less control than average. And three of the nineteen reported no significant relationship.

Contemporary theories of leadership based on such research indicate the possible lack of any specific set of leadership traits. Rather, it is argued, leadership is the process which relates the leader to a situation which varies in several dimensions: size of the organization, type of work, goals, the nature of the subordinates, and total organizational structure within which the group exists.

Research into the effects of the above situational variables on leadership style by a group of psychologists at the Ohio State Personnel Research Board over the last fifteen years has revealed that two dimensions of leader attitudes can be identified which measure leadership style and organizational climate in a variety of situations (Fleishman, 1951; 1953a, b; Halpin and Winer, 1955; Hemkil, 1955; Stodgill and Coons, 1957).

Eighteen hundred specific behaviors that leaders display were sorted and classified into ten categories
covering the range of supervisory activities (Fleishman, 1953a). Items were developed for questionnaires in each category: initiation, representation, fraternization, organization, domination, recognition, production emphasis, integration, communications down and communications up. Results of the study indicated that although high scores in any of the categories correlated with subordinate ratings of good leadership, the two dimensions of supervisory leadership (consideration and initiation of structure), accounted for most of the discrimination between effective and ineffective leadership behavior.

The considerate leader tends to regard his subordinates as individuals, each with his own motives, feelings and goals. Consideration is felt to underlie specific behaviors such as trust in the subordinates' ability to handle assigned tasks (evidenced by a refusal to supervise too closely), honest and effective communication, respect for subordinates' ideas and problems, relationships characterized by empathy, delegation of job tasks to subordinates and the willingness to empower subordinates with sufficient authority to carry out the tasks delegated (Kahn and Katz, 1953). The leader high in the "initiation of structure"
dimension tends to structure his own role and the roles of subordinates toward group goal attainment through organizing, planning and scheduling the work. He anticipates problems, thinks ahead and is able to separate trivial detail from matters of administrative importance (Smith, 1964). A preliminary Leadership Opinion Questionnaire containing 110 items was developed to assess leadership style based on the two dimensions of leader behavior and was administered to 100 foremen in a pilot study at the central foreman training school of the International Harvester Company (Fleishman, 1953b). On the basis of the results, forty items showed high reliability and were retained in the final questionnaire. From this initial research to the present, one consistent result of the use of this questionnaire is the relative independence of the two dimensions. Early use of the revised forty item questionnaire on 122 foremen, 394 employees (In the case of the employees, the instructions of the questionnaire were worded to obtain worker expectations regarding leadership attitudes.) and sixty supervisors at International Harvester yielded intercorrelations between the two dimensions which clustered about zero (Fleishman, 1953b).
The LOQ has demonstrated the ability to predict various types of leader performance. In a study of forty-two sales supervisors, Bass (1958) found a correlation between the consideration scale and management ratings of overall effectiveness of $r = .32$ after three years. For sales supervisors still employed by the company five years after the original administration, the correlation between the management rating of the supervisors' ability "to develop subordinates' performance growth and satisfaction" and the consideration scale of the LOQ was $r = .37$. The LOQ was more predictive than measures of job knowledge and intelligence, factors which had previously been demonstrated as predictive of leadership ability (Stogdill, 1948).

The relation between leadership situation and LOQ scores was the concern of a study by Oakland and Fleishman (Fleishman, 1963). They administered the LOQ to nurses and non-medical supervisors in both a small and a medium-sized private hospital and in a large, government hospital. The study was designed to determine the strength of the questionnaire in measuring the relationship between leadership attitudes and differing patterns of organizational stress. It was hypothesized
that a high score on the consideration scale would be related to low intradepartmental stress and a high score on structuring would be related to low interdepartmental stress. The hypothesis that low intradepartmental stress was significantly related to high consideration was confirmed ($r = -.31$) for fifty-eight department heads in the voluntary hospitals and ($r = -.37$) for sixty department heads in a government hospital. The structure scores in the Oaklander and Fleishman study were related to lower interdepartmental stress ($r = -.36$) only in the voluntary hospitals. This seemed to indicate that the questionnaire was sensitive to an aspect of leadership style that varied with the organizational situation, since the bureaucratic constraints in government hospitals provide more structure than the voluntary hospitals, where structure is more a product of supervisory behavior. This is further confirmed by the fact that more structure correlated with lower intradepartmental stress in government hospitals, but with greater intradepartmental stress in voluntary units.

Research in the area of achievement motivation by McClelland, et al. (1953), and Atkinson (1958, 1964), may provide an interesting approach to the motivational
characteristics of leadership behavior. McClelland (in Atkinson, 1958) cites research indicating that business and industrial situations present achievement-related cues (conditions which bring achievement motivation into a position of control over behavior) and that individuals high in achievement motivation are likely to be active and successful in business. Such research presents interesting implications for the psychology of leadership. What effect does aroused achievement motivation have on leadership style and leadership opinion?

Personality correlates in highly competitive group situations were investigated by Rychlak (1963). The subjects used for the research were eighty-four male management personnel of the New York Telephone Company. A group manufacturing problem and a group discussion problem were invented to provide situations in which leadership behavior was to be measured. In both situations groups of six men each were brought together and were assessed by the criteria of observer and peer ratings, based on the number of successful attempts to influence group decisions. In the group manufacturing problem, the subjects, who were provided with a small sum of money, purchased tinker toy parts from E which

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were assembled into products; the subjects then sold these products back to E at "current market prices." E also served as observer, rating each member's influence on the type of products produced, method of production, etc.

In the group discussion problem the men were told that they were assembled to select a hypothetical foreman for promotion. Each of the six men in the-group was provided with a written description of a foreman to study. Each man addressed the group concerning the merits of his candidate and a one-hour discussion period followed after which observer and peer ratings of the subjects' performance were again gathered. Of particular relevance to the present study were the Pearsonian correlations between leadership rankings and a measure of achievement motivation, making use of stories written about the Thematic Apperception Test (Murray, 1943) cards: 2, 6BM, 7BM, 8BM, 14 and 16. Total leadership ratings based on both observer and peer rankings were significantly related to the strength of achievement motivation in both situations.

Rychlak's results seem to conflict with those of McClelland (1961), who employed data derived from a
group of German boys. The small sample and uneven subclass numbers in the sample prevented the use of an analysis of variance, however, peer nominations indicated that boys with strong achievement motivation were not regarded as having high leadership status. Interpreting this contradiction of conclusions is difficult since age, educational background and nationality factors differ, although methodological and design differences seem most important. McClelland was primarily interested in differences between Catholic and Protestant boys on measures of achievement motivation and leadership, and was not concerned with arousing achievement motivation through the use of a laboratory-produced, competitive situation where measurement was made of actual leadership performance. Peer opinion questionnaires in McClelland's investigation differed from Rychlak's as well. McClelland's questionnaires requested nomination of those regarded as likely to be future leaders, regardless of type (industrial, business, political or social); whereas Rychlak's questionnaire requested opinions derived from the observations of actual leader behavior in a specific situation.
Achievement motivation is defined as the desire to compete against a standard of excellence, either internal or external, in situations where individual skill plays the major role in the outcome (McClelland, Atkinson, et al., 1953). It would be expected, therefore, that subjects high in achievement motivation would exhibit stronger leadership behavior under Rychlak's explicitly competitive conditions. Rychlak's ratings, however, were designed to measure only the structuring dimension of successful leadership attempts; acts of initiative and influence over others' performance; and successful attempts to coordinate the activities of the group, regardless of the style of leadership employed. In essence, the study demonstrated that subjects high in achievement motivation may be more successful in attempting to structure the work of others, but may be less concerned with assessing the acts of consideration for subordinates who may have played a part in successful leadership.

A hypothesis relating consideration and achievement motivation is given foundation in an exhaustive study of the correlates of motive configuration as performed by Groesbeck (1958) on 128 male trainees in the Veterans'
Administration training program. On the basis of a TAT measure, the data were placed in a 2 x 2 chi-square table of the relationship between achievement motivation and affiliation motivation. The subjects were classified by Motivation Categories: those high on both achievement and affiliation scales, those high on achievement and low on affiliation scales, those low on achievement and high on affiliation scales and those low on both. Trait ratings by the subjects themselves, using self report questionnaires; by their peers, using sociometric choices, and by the assessment staff, using personal history materials—all these were related to each cell on the basis of high-low division of scores in one subgroup, compared with the other three subgroups combined.

The hypothesis that subjects high in both the achievement and affiliation motivation scales would prefer to collaborate with others in attaining their goals was confirmed. The expectation that the high-achievement, low-affiliation group would be self-sufficient and independent-minded, however, was not supported by peer ratings. Peers rated this group as being more understanding of others and having more
insight into others than those in the low-low group. They were seen as having a superior ability to communicate and an enhanced social interaction. Groesbeck's evidence suggests that subjects high in achievement motivation, regardless of the level of the motive to affiliate, seem to show concern for others involved in a task and seem to be viewed by their peers as being able to interact effectively with others in attaining goals.

Taken together, the Rychlak and Groesbeck studies suggest that in an experiment designed to investigate the relationship between achievement motivation and leadership opinion, the following hypothesis would be valid: Environmental achievement-arousal cues will result in a significant shift in leadership opinions for subjects with a high level of achievement motivation. In order to test such a hypothesis, two working hypotheses were drawn for the present study: 1. Under achievement arousal conditions, subjects who have high achievement motivation will score higher on the structure and consideration scales of a test of leadership opinion than subjects with weak achievement motivation; 2. Under relaxed conditions, leadership opinion scores
of the subjects high in achievement motivation will not differ from those of subjects with weak achievement motivation.
METHODODOLOGY

The experiment designed to test the hypotheses consisted essentially of a 2 x 2 factorial design. One of the independent variables, level of achievement motivation, was defined operationally as the subject's score on the Iowa Picture Interpretation Test (Hurley, 1955), a multiple choice projective test. The second independent variable, relaxed versus achievement arousal conditions, was induced in the experimental situation by the technique standardized by Atkinson (1964). The dependent variable, leadership opinion, was operationally defined as the subject's scores on the two dimensions of the Leadership Opinion Questionnaire (Fleishman, 1960). The Iowa Picture Interpretation Test (IPIT) was used as the achievement motivation test. The IPIT, divided by Hurley (1955), is a variation of the Thematic Apperception Test (TAT) and uses the following TAT pictures: 1, 2, 4, 6BM, 7BM, 7GF, 8BM, 13B, 14, and 17BM. The normative data for this test were based on the responses of 455 subjects. The test-retest reliability based on a six week interval
was .52 for the achievement imagery response class.

Evidence of validity of the IPIT is provided by studies in which predictions of rate of learning nonsense syllables, mazes and performance on an arithmetic task were confirmed. Four responses being available to the subject for each of the ten pictures, the subject is forced to rank the alternatives from "one" (the interpretation the subject would most likely give) to "four" (the interpretation the subject would least likely give).

Scoring is performed by summing the ranks assigned by each subject to the ten response interpretations reflecting achievement imagery. The IPIT instructions read to the subjects were the following:

"Each of the pictures you are about to see is indicated by a number on the following page. With each number four interpretations have been listed which have been given rather often for that particular picture. Rank these four alternative choices in terms of their correspondence with your own idea of what the pictures express. As an example, examine the alternative interpretations offered for the picture now on the screen. Find the interpretation that you would most likely give. Rank or mark it 1 on the answer sheet. If choice B is the most like your own interpretation, then it would be ranked 1. Then find the alternative that seems next most likely, mark it 2, and so on. The choice that you would least likely give should be ranked or marked 4. You must rank each choice. Even if you have difficulty deciding what the ranks should be, make the best decision you can. Remember, there are no right or wrong
Alternatives, all of these interpretations are possible and are sometimes given. Don't spend too much time trying to decide. Give your first impressions."

Each of the 10 TAT pictures was shown from an opaque projector in a group presentation.

The test used to measure leadership opinion was the Leadership Opinion Questionnaire (LOQ), a forty item test developed by Edwin A. Fleishman (1960). Each test item is comprised of a phrase describing some behavioral aspect of leadership (e.g., "back up what persons under you do") and five response alternatives ("always," "often," "occasionally," "seldom," "never") for expressing the subject's opinion of the phrase. Split-half estimates of internal consistency ranged from .62 to .89. Test-retest reliabilities over a three month interval ranged from .67 to .80 (Fleishman, 1960). The results of recent validity studies, compiled by Fleishman (1963), include demonstration of the questionnaire's ability to predict the success of sales supervisors, warehouse foremen and managers; and a study of the relationship between LOQ scores and interdepartmental stress. The LOQ provides scores for two dimensions of supervisory leadership, defined as structure (S) and Consideration.
identified by Fleishman as two broad areas which significantly affect supervisory-subordinate situations. The subjects selected for testing were male college students enrolled in an introductory psychology class at Western Michigan University. The study was restricted to males partly because of a view toward possible industrial applications of the results and secondly because of the present difficulty of deriving reliable achievement motivation scores from women (Atkinson, 1964). Those scoring high in achievement motivation on the IPIT (a raw score of 19 and below) and those scoring lowest (a raw score of 22 and above) were selected for administration of the LOQ. There were forty subjects in the high achievement group, forty subjects in the low achievement group. Half of the subjects in each of the two groups were then randomly assigned to achievement-arousal or relaxed experimental conditions for the administration of the Leadership Opinion Questionnaire. There were forty subjects exposed to the achievement-arousal conditions and forty subjects exposed to the relaxed conditions. No controls were established for age or intelligence measures since the subjects were selected from the relatively homogeneous college-student
The subjects were tested for achievement motivation under neutral conditions in which "... no experimental attempt was made either to arouse the motive or to create an especially relaxed state" (Atkinson, 1958). This procedure conforms to that prescribed by McClelland, et al. (1953) and Atkinson (1958) in which the underlying strength of the motivation or latent disposition to strive for a certain goal state may be best assessed using the projective measure. It was assumed that the normal classroom cues would promote the seriousness of purpose necessary to maintain the attention and cooperation of the students. At the same time, no experimental manipulations or verbal cues were introduced in the IPIT administration, so that the ranking that the subjects gave to achievement-related interpretations of the TAT pictures would be an accurate indication of the chronic achievement orientation.

Following the scoring of the IPIT, half the subjects scoring high in achievement imagery and half those scoring low were administered the LOQ under relaxed conditions. In this situation, as in the administration of the IPIT, there was strict adherence to the conditions.
prescribed by Atkinson (1953). Every effort was made to minimize achievement cues: The subjects were removed from their regular classroom and allowed to seat themselves in the experimental room in whatever arrangement they pleased; the LOQ was introduced to them as a new test in need of normative data; the test was administered in a friendly informal manner, by a graduate student who answered any questions, gave no time limit—in a phrase, did nothing to construe the task as related to ability or competence. Responses specific to success or failure experience were also minimized because of the lack of any normative data being introduced. The subjects were dismissed upon group completion of the test.

The remaining subjects from the high achievement and low achievement groups were administered the LOQ under achievement-arousal conditions. Once again every effort was made to strictly adhere to the conditions previously established for arousing the achievement motive by deliberately attempting to bring in additional achievement related cues. These cues involved administration of the LOQ by the classroom professor, the setting of a time limit (which was ample), a rigid seating arrangement and verbal
instructions which emphasized the importance of doing any task well and competing against a standard of excellence. When all of the students who had previously taken the IPIT were initially assembled for administration of the LOQ, a mimeographed sheet was distributed. The sheet listed each student under one of three headings: group 1, who were to remain in the classroom for administration of the LOQ under aroused conditions; group 2, who were sent to a classroom where they were instructed to leave the building; and group 3, who were sent to another classroom where they were administered the LOQ under relaxed conditions. All females were excused. When only those males who were listed in group 1 remained and a serious attentive atmosphere was attained, the following instructions were read by the classroom professor:

"Please print your full name on the test. Where it says 'company' place as accurate an estimate of your grade point average as you can. If this is your first semester at Western Michigan University, place the grade point average you expect to attain at the end of the semester in this space. Where it says 'position' on the test booklet, place the career position you are presently hoping to achieve. (Pause until writing has stopped and attention is returned to the instructor.) The test you are about to take measures attitudes which will affect your success in almost any career you may choose. More important than your level of
intelligence, this test is designed to measure your ability to direct a group of people toward completion of a task and your ability to evaluate and supervise others, traits that are most often requested by prospective employers who contact the departmental offices for recommendations of students for future employment.

"Because there are presently so many students enrolled, I wish to have a record of your scores to refer to before writing any letters of recommendation which you may request. I wish to urge you to try your hardest on this test and give all the items careful consideration as students like yourselves whose scores we already have, have done rather well. Notice will be posted on your scores and rank as soon as the tests are corrected. Please work as quickly and efficiently as possible."

Such conditions and verbal instructions seemed sufficiently to establish an atmosphere of arousal. Questions raised by some of the students after the instructions were read indicated concern on their part about a possible comparison of individual differences of scores which might be made. Following the instructions, the directions on the LOQ test booklet were read, the test was administered and the subjects were excused on individual completion.
RESULTS

Table 1 and Table 3 show the means and standard deviations for the scales of the Leadership Opinion Questionnaire, Table 1 for the structure scale, Table 3 for the consideration scale. Table 2 presents the results of an analysis of variance of structure-scale scores. The F-ratios for the achievement motivation and arousal factors as well as the interaction between these two factors indicate that there are no significant differences between the means shown in Table 1. The results of the analysis of variance for the consideration scale scores shown in Table 4 also reveal F-ratios which indicate the absence of any significant differences between the consideration scale means shown in Table 3.

The results of this experiment do not support the hypothesis that subjects high in achievement motivation will show stronger leadership opinions under experimentally produced arousal conditions than subjects with low achievement motivation under the same conditions. As a control for this hypothesis, leadership opinion of subjects both high and low in achievement motivation
### TABLE 1
MEANS AND STANDARD DEVIATIONS OF THE STRUCTURE SCALE OF THE LEADERSHIP OPINION QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High achievement-aroused</td>
<td>54.60</td>
<td>6.60</td>
</tr>
<tr>
<td>High achievement-relaxed</td>
<td>54.10</td>
<td>8.00</td>
</tr>
<tr>
<td>Low achievement-aroused</td>
<td>53.65</td>
<td>5.77</td>
</tr>
<tr>
<td>Low achievement-relaxed</td>
<td>56.40</td>
<td>5.86</td>
</tr>
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</table>

### TABLE 2
ANALYSIS OF VARIANCE FOR STRUCTURE SCORES

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>d.f.</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement motivation</td>
<td>9.11</td>
<td>1</td>
<td>9.11</td>
<td>-</td>
</tr>
<tr>
<td>Arousal</td>
<td>25.32</td>
<td>1</td>
<td>25.32</td>
<td>-</td>
</tr>
<tr>
<td>Interaction</td>
<td>52.81</td>
<td>1</td>
<td>52.81</td>
<td>1.15*</td>
</tr>
<tr>
<td>Within groups</td>
<td>3503.95</td>
<td>76</td>
<td>46.10</td>
<td></td>
</tr>
</tbody>
</table>

Total                    | 3591.19        | 79   |             |       |

*F*(1,76) = 3.98 at the .05 level.
### TABLE 3
MEANS AND STANDARD DEVIATIONS OF THE CONSIDERATION SCALE OF THE LEADERSHIP OPINION QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High achievement-aroused</td>
<td>54.15</td>
<td>5.30</td>
</tr>
<tr>
<td>High achievement-relaxed</td>
<td>52.70</td>
<td>4.01</td>
</tr>
<tr>
<td>Low achievement-aroused</td>
<td>54.85</td>
<td>8.10</td>
</tr>
<tr>
<td>Low achievement-relaxed</td>
<td>52.80</td>
<td>6.58</td>
</tr>
</tbody>
</table>

### TABLE 4
ANALYSIS OF VARIANCE FOR CONSIDERATION SCORES

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>d.f.</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement motivation</td>
<td>3.20</td>
<td>1</td>
<td>3.20</td>
<td>-</td>
</tr>
<tr>
<td>Arousal</td>
<td>61.25</td>
<td>1</td>
<td>61.25</td>
<td>1.54*</td>
</tr>
<tr>
<td>Interaction</td>
<td>1.80</td>
<td>1</td>
<td>1.80</td>
<td>-</td>
</tr>
<tr>
<td>Within groups</td>
<td>3018.50</td>
<td>76</td>
<td>39.72</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3084.75</td>
<td>79</td>
<td></td>
<td></td>
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</tbody>
</table>

*F(1,76) = 3.98 at the .05 level.
were measured under relaxed experimental conditions. Operational support for such a prediction would have come from a significant interaction effect measured by the analyses of variance employed on both the structure and consideration scores of the LOQ. Tables 2 and 4 indicate that a significant interaction between level of achievement motivation and experimental arousal conditions did not occur. Subjects high in achievement motivation did not show stronger leadership opinions when the attempt was made to arouse, and to place behavior under the control of achievement motivation. The forty high-achievement subjects versus the forty low-achievement subjects also failed to contribute significant between-group variance on either of the LOQ scales.

Pearson product-moment correlations were performed for comparison between the structure and consideration scores for each cell as well as the total. Table 5 presents the results of the correlation.

The correlation between the structure and consideration scores for the total group was negative and significant at the .01 level of confidence. Inspection of the data indicates that while all cells showed a
TABLE 5
CORRELATION COEFFICIENTS BETWEEN STRUCTURE AND CONSIDERATION SCALES

<table>
<thead>
<tr>
<th>Group</th>
<th>d.f.</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>High achievement-aroused</td>
<td>19</td>
<td>-.27</td>
</tr>
<tr>
<td>High achievement-relaxed</td>
<td>19</td>
<td>-.14</td>
</tr>
<tr>
<td>Low achievement-aroused</td>
<td>19</td>
<td>-.11</td>
</tr>
<tr>
<td>Low achievement-relaxed</td>
<td>19</td>
<td>-.69*</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>-.31**</td>
</tr>
</tbody>
</table>

**Significant at the .01 level.

*Significant at the .001 level.
negative correlation, the cell containing the low-achievement motivation subjects under relaxed conditions contributed most heavily to the significance of the over-all coefficient.
DISCUSSION

The data resulting from the administration of the LOQ under neutral and achievement arousal conditions indicate that aroused achievement motivation did not result in a shift of leadership opinion.

In this research, the arousal of achievement motivation is dependent on the degree to which the introduction is successful in convincing the subjects that the task is competitive and has some objective probability of success. The verbal instructions used in the arousal conditions included the notation that scores on the LOQ would be compared with the scores obtained by other students who had "done very well," and further that the scores would remain on university records available to prospective employers looking for graduates with leadership potential. Instructions such as these have been shown to arouse achievement motivation and to produce a differentiation in performance between subjects preselected for high and low achievement motivation on a variety of tasks ranging from ring-toss games to sophisticated measures of verbal and mathematical ability (McClelland, et al., 1953; Atkinson, 1958).
It might be seriously questioned, however, whether or not the subjects in this experiment could perceive an attitude questionnaire such as the LOQ as a competitive test of skill. Further, the lack of any real supervisory leadership experience of the collegiate underclassmen used in this study would preclude any real knowledge on which to base a level of aspiration. More important, the test was not designed as a measure of success based on an absolute standard, but only as a measure of an opinion profile which might arise within any specific type of leadership situation. The attempt to arouse competitive achievement motivation for the administration of the LOQ, therefore, possibly served only to create confusion and did not create the proper opportunity for the exercise of achievement-related behavior. Three months' experience by the subjects in the introductory course in psychology may also have biased the results of the LOQ by fostering an unnatural awareness of the "human relations" aspect of the LOQ items.

It is also possible that the use of a homogeneous population of college students--while beneficial in reducing variance of such factors as age, intelligence
or organizational experience—may in this research have precluded obtaining any significant differences from the analysis of variance performed. It is probable that university admission procedures exclude subjects which belong to the true low achievement motivation groups: This may have served to restrict the range of achievement motivation (IPIT) scores from which to preselect the high and low achievement groups for LOQ administration. The limited reliability of the IPIT may also have served to reduce the accuracy of the preselection. Based on the formulation that the maximum possible validity of a measure is the square root of the reliability (Helmstadter, 1964), the test-retest reliability coefficient of .52 was less than desirable. Returning to the McClelland system of scoring stories written in response to TAT cards does not alleviate the situation. Test-retest reliabilities reported have ranged from an undesirable .22 to a humble .54 (McClelland, 1953). Cofer and Appley (1964) advise that the test-retest method of estimating reliability is not appropriate to a projective measure and suggest therefore that research into the relationship between achievement motivation scores and other behaviors be
sought as indirect evidence of the stability of need for achievement.

This suggestion points toward the possibility that a more significant test of hypotheses regarding the relationship between aroused achievement motivation and leadership opinion might employ an opportunity for actual leadership performance under competitive conditions. The procedure used by Rychlak (1963), in which realistic group discussion problems were established so that subjects had to compete for a position of leadership among peers, would fit the need for an achievement arousal situation specific to the measure of leadership behavior and would suggest a possibility for further research in this area.

Rychlak's original study used rating scales which were not designed to distinguish "authoritarian" from "democratic" leadership style. Redesigning the scales used by the observer and peer raters to include a distinction between structuring and consideration behaviors might provide an assessment of the relative amount of each behavior. The number of successful leadership attempts made by subjects previously identified as high in achievement motivation versus those low in achievement
motivation under such actual competitive conditions would yield a more direct test of the effects of achievement motivation on leader behavior. If followed by the LOQ administered under neutral conditions, this method would, in addition, yield a profile of leadership opinion for high-achievement subjects based on a truly competitive situation.

The results of this study fail to support Fleishman's claim that the LOQ scales are independent dimensions of leadership. The factor analysis method used to develop the questionnaire and the research based on its use in many settings are supplied as reasons for the independence of the scales. The median of the correlations between dimension scores for various samples was shown to be around zero (Fleishman, 1960). The intra-dimension correlations obtained in this study, however, indicated that the subjects perceived supervisory behavior characterized by active structuring, planning, criticizing and detailed coordination of work activities as inconsistent with considerate superior-subordinate relationships characterized by respect, mutual trust and warmth.

The significance of the negative correlation found
in this study and the correlations between dimension scores published in the LOQ manual (1960) suggest that although correlations between the dimensions settle near zero, a trend may be evident. Inter-dimension correlations for subjects who are in the lower levels of their organization or who are less experienced (first line supervisors, general foremen, college students, naval officer candidates) are consistently negative. Subjects who are in the upper echelons of management (two samples of "top executives" and a sample of air force officers) tend to show greater independence between the two areas of leadership opinion. Research designed to compare the correlation between the dimensions of the LOQ for younger, less experienced leaders versus older executives might indicate that the increasing willingness to perceive structure and consideration opinions as compatible may be a function of age, experience, level of organizational position or the interaction of these variables.
SUMMARY

As an outgrowth of experimental investigation of the phenomenon of achievement motivation, a hypothesis was made that environmental arousal cues would produce a significant shift in leadership opinion for subjects with a high level of achievement motivation.

Eighty subjects were selected on the basis of an achievement motivation test (IPIT), forty of whom scored high in achievement motivation and forty of whom scored low. Twenty subjects were randomly selected from each group for administration of the Leadership Opinion Questionnaire under achievement arousal conditions. The remaining twenty subjects from each group were administered the LOQ under relaxed conditions as a control for the attitude changes anticipated under the arousal conditions. Scores on neither the structure nor consideration dimensions differed significantly between the four cells and the hypothesized interaction between level of achievement motivation and the achievement arousal condition failed to occur. An alternative
method for the arousal of achievement motivation was suggested as a better test of the hypothesis established initially.
REFERENCES


