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Faculty Working Papers

Leadership Style, Stress, and Behavior in Task Performance

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LEADERSHIP STYLE, STRESS, AND BEHAVIOR IN TASK PERFORMANCE

The situational approach in leadership research is based on the belief that to obtain effective performance different styles of leadership are required in different situations. Following the situational approach, Fiedler's (1967) contingency model postulates that effective group performance is contingent upon the interaction of leadership style as measured by the esteem for the least preferred co-worker (LPC) and the favorableness of the situation for the leader, or the degree to which the situation provides the leader with potential power and influence over group behavior.

The LPC Measure of Leadership Style

The esteem for the least preferred co-worker (LPC) measure of leadership style is a key variable in the contingency model. To obtain the LPC, the individual is asked to rate his least preferred co-worker on a series of 8-point bipolar adjective scales (e.g., friendly-unfriendly, pleasant-unpleasant). The sum of these ratings is the individual's LPC score.

Originally, Fiedler (1958, 1961) looked upon the LPC as a leadership trait measure with the high LPC individual viewed as being considerate and interpersonally oriented and the low LPC individual as being directive and task oriented. Later, Fiedler (1967) shifted toward a more motivational interpretation of high and low LPC individuals. He described the high LPC individual as a person who derived his major satisfaction from successful interpersonal relationships and the low LPC individual as a person who derived his major satisfaction from task

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performance. More recently, Fiedler (1970) has suggested that the LPC score reflects a hierarchy of goals. The high LPC individual has as his primary goal the establishment and maintenance of good interpersonal relations and as his secondary goal the attainment of self-enhancement and prominence. The low LPC individual, by contrast, has as his primary goal the achievement of task and material rewards and as his secondary goal good interpersonal relations. Fiedler (1967, 1971) has presented evidence in support of his contingency model. The model predicts that in very favorable and very unfavorable situations the low LPC individual will obtain the best group performance, and in situations of intermediate favorableness the high LPC individual will obtain the best group performance.

Inconsistent Findings

Findings inconsistent with those of Fiedler, particularly in regard to the meaning of the LPC score, have been reported by several researchers. Nealey, for example, in an unpublished study (Fiedler, 1971) found that low LPC individuals preferred good interpersonal relations and high LPC individuals preferred an efficient task group. Ayer (1968) obtained similar results in a study of the effects of success and failure of interpersonal and task performance on leader perception and behavior.

Mitchell (1969, 1970) in a detailed test of the cognitive differences of high and low LPC individuals reported that low LPC leaders were more concerned about interpersonal relations in a task setting than high LPC leaders and performed better in situations of intermediate favorableness. High LPC leaders, on the other hand, were more concerned about task accomplishment and performed better in the most favorable and unfavorable situations.

Stress as a Moderator

In attempts to understand these inconsistent findings, the stressfulness of the situation has emerged as a possible explanation. Basically, there have been two approaches to this explanation. Fiedler (1970) and Mitchell (1970) have followed a hierarchy of goals approach. As recently proposed by Fiedler (1970), the high LPC individual has two goals. His primary goal is good interpersonal relations and his secondary goal is self-enhancement and prominence. (The assumption is that the latter goal can be obtained through successful accomplishment of the assigned task.) Fiedler reasons that in non-stressful situations the high LPC individual with his primary goal of good interpersonal relations satisfied, concentrates on his secondary goal and thereby exhibits task concerns and behavior. However, in stressful situations he drops down to his primary goal and exhibits concern and behavior directed toward interpersonal relations. In similar manner, the low LPC individual exhibits interpersonal concerns and behavior in nonstressful situations and task concerns and behavior in stressful situations.

The second approach hypothesizes that both high and low LPC individuals differ in their cognitive abilities and perceptual tendencies and that these cognitions are influenced by the stressfulness of the situation. It is this second approach that we chose to use in attempting to determine if stress moderates the behavior of high and low LPC individuals in task performance.

A Conceptual Model

Triandis (personal communication, 1970)* has suggested a conceptual model for further exploring the relationship between LPC and stress.

*Professor Harry C. Triandis, Department of Psychology, University of Illinois at Urbana-Champaign.

[illegible]

[illegible] and [illegible] [illegible] above [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] (1970) [illegible] (1971) [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Although the model, as shown below, draws on the work of Fiedler (1967), Mitchell (1969), and Schroeder, Driver and Streufert (1967), it is unique in its modification and application to leadership research. Let P in the model stand for a salient interpersonal relations construct and T for a salient task construct, with the term "salient" to mean in this

Non-Stressful Situation		Stressful Situation	
High LPC	TTTTPPP	High LPC	PPPT or PPP
		Low LPC	TTTP or TTT
Low LPC	PPPPTTT		

case the availability of, as well as the motivational predisposition to use, the construct. In a situation perceived as non-stressful, it is presumed that both high and low LPC individuals (leaders) will have salient interpersonal relations and task constructs. The number of salient interpersonal relations and task constructs is rather arbitrary. In accordance with the findings of Nealey (Fiedler, 1971), Ayer (1968), and Mitchell (1969), however, a high LPC individual is shown to have a larger number of salient task constructs (TTTTPPP) and a low LPC individual a larger number of salient interpersonal relations constructs (PPPPTTT).

It is further presumed that in a perceived stressful situation, the cognitive fields of both high and low LPC individuals will be restricted and thereby reduce the number of salient interpersonal relations and task constructs (Brock, 1962; Haywood, 1962; Osgood, Suci and Tannenbaum, 1957). As the model illustrates, this would result in a lower proportion or a complete loss of salient task constructs for a high LPC individual (PPPT or PPP) and a lower proportion or complete loss of salient interpersonal relations constructs for a low LPC individual

(TTTP or TTT). The arrangement of salient task and interpersonal relations constructs in the stressful situation is consistent with the interpretation of the LPC in the contingency model.

Hypotheses

From the review of prior research and the conceptual model presented above, the following hypotheses were developed to investigate the task performance of high and low LPC individuals in non-stressful and stressful situations.

Hypothesis 1. A high LPC individual uses a larger number of salient task constructs in a non-stressful situation than in a stressful situation, and a low LPC individual uses a larger number of salient interpersonal relations constructs in a non-stressful situation than in a stressful situation. This hypothesis attempts to define the left side of the conceptual model and is based on the findings of Nealey, (Fiedler, 1971), Ayer (1968), and Mitchell (1969).

Hypothesis 2. A high LPC individual uses a larger number of salient interpersonal relations constructs in a stressful situation than in a non-stressful situation, and a low LPC individual uses a larger number of salient task constructs in a stressful situation than in a non-stressful situation. This hypothesis attempts to define the right side of the conceptual model and is based on Fiedler's (1967) interpretation of the LPC.

Hypothesis 3. In a stressful situation, a high LPC individual uses a larger number of salient interpersonal relations constructs than a low LPC individual, and a low LPC individual uses a larger number of salient tasks constructs than a high LPC individual. This hypothesis

attempts to directly test the notion that perceived stress, as a moderator variable, provides some explanation of the apparent discrepancies in findings.

METHOD

The hypotheses were tested using two independent samples (N=30 in each case) of state highway engineers participating in four-day management development programs. The samples were composed of all male subjects in supervisory, civil service positions. Approximately 95% of the subjects had a bachelor's degree and 25% a master's degree. The men were involved in various phases of the design, construction, and maintenance of highways, and ranged in age from 24 to 55 years.

Subjects were administered the 17-item version of the LPC. In much of Fiedler's (1967) research, the placement of individuals into either a high or low LPC category was accomplished by dividing the sample at the median LPC score. Following the suggestion of Bass, Fiedler and Krueger (1964), however, the subjects in this study were divided into thirds (high, medium, and low LPC scores), with the top and bottom thirds being designated as high and low LPC individuals. This procedure reduced the total number of subjects to 18 in the first sample and 22 in the second sample.

Dependent Variable

The instrument selected for measuring the dependent variable (task performance) was the Bureau of Business In-Basket Test developed by Frederickson, Saunders, and Wand (1957). It is an elaborate, but realistic situational test that simulates various aspects of an administrator's paperwork. It is made up of letters, memos, and records of

[illegible] [illegible], [illegible] [illegible] [illegible] [illegible],

medical [illegible] [illegible] [illegible]; recent disco-

[illegible] [illegible].

[illegible]

[illegible] [illegible] [illegible] [illegible] sample of 30 in

[illegible] [illegible] [illegible] [illegible] four-day passage

[illegible] program. The [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

the [illegible] [illegible] [illegible] [illegible] [illegible]. The men

were [illegible] [illegible] [illegible] construction, [illegible]

[illegible] [illegible] [illegible] [illegible] 55 years.

[illegible] [illegible] [illegible] [illegible] [illegible] 1970. In each

[illegible] (1963) [illegible] [illegible] individuals [illegible]

[illegible] [illegible] [illegible] [illegible] obtaining the sample

the mean [illegible] [illegible] the [illegible] [illegible]

[illegible] (1964) [illegible] [illegible] were divided i-

thirds (high, medium, [illegible]) [illegible] [illegible]

being designated [illegible] [illegible]. This procedure

[illegible] [illegible] [illegible] [illegible]

the second sample.

Dependent Variable

The [illegible] [illegible] for [illegible] [illegible] variable (the

[illegible]) was the [illegible] [illegible] developed by

[illegible] (1965). It is [illegible] [illegible], but

[illegible] [illegible] that [illegible] [illegible] administer-

[illegible] [illegible]. It [illegible] made up [illegible], and records [illegible]

telephone calls that have accumulated in the in-basket of an administrator. The subject is provided with background information about the organization in which he is working and instructed to respond to the materials in the in-basket as if he were actually on the job. He is to write the letters, prepare agendas for meetings, arrange conferences, or to perform any other activities he feels are appropriate.

There are some advantages to using an in-basket test. First, because of the wide range of possible responses and the open-ended nature of the instructions, it is difficult for the subject to know what is being measured. Although he might guess that it is desirable to accomplish a great deal of work or to assign priorities to the in-basket items, he is probably unable to determine the selected scoring categories. Consequently, the results are more likely to represent his typical performance rather than his maximum performance (Cronbach, 1960). Secondly, the in-basket test is adaptable to experimental variation. As noted by Frederiksen (1966), the background factors in situational tests, such as the in-basket test, can be systematically varied "in ways which permit the testing of appropriate hypotheses about leadership or social behavior /p. 108/." Finally, for the subjects in this study, the in-basket items provided a realistic simulation of the types of problems they encountered in their regular jobs.

Scoring Method. Fairly reliable scoring methods for the In-basket Test have been developed to reflect such tendencies as taking final action, procrastinating, and interacting with subordinates or superiors (Frederiksen, 1962). The scoring method used in this study, however, was to simply count the number of task and interpersonal relations responses made by

each subject. The number of task responses then represented the number of salient task constructs and the number of interpersonal relations responses represented the number of salient interpersonal relations constructs. For example, one item in the test is a letter from a Bureau manager complimenting the work of a Bureau field agent. A task response was recorded for those subjects who indicated they would file the letter and an interpersonal relations response for those who indicated they would in someway let the field agent know about the letter or see to it that he received recognition. In addition to the task and interpersonal relations scoring categories, a mixed category was used for test items that were not clearly task or interpersonal relations in nature. Inter-rater agreement on the items ranged from .80 to .90.

Experimental Treatment

The experiment was conducted as part of a regular four-day management development program and subjects were not informed of the experiment until its completion. The stress and non-stress groups reported to separate rooms and were given packets of the in-basket materials. The non-stress groups were informed that the in-basket materials were being developed as a training device, that they had one hour to work, that they did not need to complete all of the items, and that after the exercise they would be asked to comment on the general format and realism of the in-basket materials.

The stress groups were informed that the in-basket materials were designed to measure what they had learned while attending a series of management courses during the past two years, and more importantly, that the test was a measure of their administrative ability. They were informed that they had one hour to complete the test items. The fact that the

division in which the subjects were employed was in the initial stages of reorganization quite likely added to the stressfulness of the situation.

Stress and a Stress Measure

The term "stress" is currently used to cover a wide variety of phenomena, ranging from physical to social and cultural factors (Appley and Trumbull, 1967; Lazarus, 1966; McGrath, 1970). As noted by Cohen (1967), the term is understood by everyone when used in a general context, but understood by few when an operational definition is desired. Lazarus (1966) has distinguished what he calls "psychological stress" from other kinds of stress by emphasizing threat as an intervening variable. Threat implies a situation in which the individual anticipates a harmful confrontation, or what McGrath (1970) has described as demand-capability imbalance. Along these lines, McGrath (1970) has defined psychological stress as an "imbalance between perceived or subjective demand and perceived response capability /p. 17/."

Two key concepts associated with psychological stress are anticipation and motive or need. Stress, in a given situation, is based largely on the way the focal person perceives the situation. It is anticipation or future-oriented and evolves from the cognitive processes of the individual. If an individual perceives that he is (or will be) capable of handling a situation, he will feel little stress regardless of the accuracy of his perception. The second key concept involves need. A future situation perceived as irrelevant to the focal person's needs will not lead to threat appraisal. If, for example, whether one succeeds or fails in a given situation is perceived to be of little importance, then demand-capability imbalance loses its stress potential. On the other hand, if

stress is perceived, the intensity of the stress will depend, as Sells (1970) has stated it, "on the importance of individual involvement and the individual's assessment of the consequence of his inability to respond effectively to the situation /p. 138/."

Finally, in regard to the relationship between task and stress, McGrath (1970) has suggested that various types of tasks can have different roles within a research sequence. He identifies these roles as follows:

1. Performance of a stressful task. The task itself contains qualitative, complex problems
2. Performance of a task under stressful conditions. Non-task stress conditions such as having an observer present.
3. Performance of a task to cope with stress. Where performance of a task serves to reduce the affects of the stressful condition.

In the design of this study, only non-task stress conditions were used. In addition, the major focus was not directed at the micro processes the individual experiences under stress, but at the performance of certain individuals (those with high and low LPC leadership styles) under stressful conditions. Stress was viewed, therefore, as a perceived imbalance of demand-capability by a focal person in an area of importance to him and the impact of stress on performance was investigated through the use of a stressful non-task condition.

Stress Measure. In view of the controversial nature of self-report techniques in measuring anxiety (McGrath, 1970), a physiological measure of stress was used. The physiological measure used was of the palmar sweating type. Sweat glands in the palmar surface are reported to respond

rapidly to mental and emotional stimuli, making palmar sweating a useful indicator of psychological change (Montagna, 1962). Palmar sweating has been measured indirectly by colormetric methods that indicate the amount of sweat by color changes on specially treated paper.

The measure used in this study was originally developed by Sutarman and Thomson (1952) and refined by Johnson and Dabbs (1967). It is based on a count of active sweat glands on the tip of a finger. The count is taken from a finger print made with a moisture-repellent solution. The solution is daubed on a finger tip and when it dries (15-20 seconds) it is lifted off with transparent tape and placed on a glass slide. When magnified, active sweat glands appear as holes or dots along the ridges of the finger print.

In this study, the finger printing was presented to the subjects as part of an unrelated study and was conducted by two research assistants. Prints were taken two or three times throughout a two-day period prior to the experiment so that the subjects were accustomed to the procedure. A final set of prints was taken just prior to the introduction of the in-basket exercise and again while the subjects were working on the materials. Harrison and MacKinnon (1966) have suggested that anxiety decreases as people become more involved in problem solving activities. To avoid this possibility, the "during experiment" print was taken 5-10 minutes after the beginning of the exercise.

RESULTS

Sample 1

The mean number of active sweat glands before and during the experimental treatment for the non-stress and stress groups in sample 1 are shown in Figure 1. While there was no significant difference between

the means for these groups before treatment, the mean for the stress group during treatment was significantly higher than the mean for the non-stress group ($t = 2.310$, $p \leq .025$). This result, which was an essential prerequisite for testing the conceptual model, indicated that the experimental treatment did produce a significantly higher level of anxiety (as measured by the palmar sweating technique) between members of the non-stress and stress groups.

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Insert Figure 1 About Here
- - - - - - - - - - - - - - -

Figures 2 and 3 represent the plots of the means of interpersonal relations and task responses of high and low LPC subjects in the non-stressful and stressful situations. All are in the hypothesized direction.

- - - - - - - - - - - - - - - - - -
Insert Figure 2 and 3 About Here
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Further comparison of the means for interpersonal relations and task responses of high and low LPC subjects and t-test scores are shown in Table 1.

- - - - - - - - - - - - - -
Insert Table 1 About Here
- - - - - - - - - - - - - -

The results provide strong support for hypothesis 1, which postulated that a high LPC individual uses a larger number of salient task constructs in a non-stressful situation than in a stressful situation and a low LPC individual uses a larger number of salient interpersonal relations constructs in a non-stressful situation than in a stressful situation. The results also provide strong support for those portions of hypotheses 2 and 3 which deal with the use of salient task constructs by a low LPC

individual in a stressful situation. The low LPC individual used a larger number of task constructs in a stressful situation than he did in a non-stressful situation and also in the stressful situation he used a larger number of task constructs than a high LPC individual. The results for those portions of hypotheses 2 and 3 which deal with the use of interpersonal relations constructs by high and low LPC individuals, although in the predicted direction, were not statistically significant.

Sample 2

Measurement instruments and experimental procedures for the second sample were identical to those for the first sample.

The mean number of active sweat glands before and during treatment for the non-stress and stress groups are shown in Figure 4.

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Insert Figure 4 About Here
- - - - - - - - - - - - - - -

Again, there was no significant difference between the means for the groups before treatment; however, during treatment the mean for the stress group was significantly higher than the mean for the non-stress group ($p \leq .0005$). Also, as in the first sample, the plots of the means of interpersonal relations and task responses of the high and low LPC subjects in the non-stressful and stressful situation (Figures 5 and 6) were in the hypothesized direction.

- - - - - - - - - - - - - - - - - -
Insert Figures 5 and 6 About Here
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T-test scores of the differences between the means for the interpersonal relations and task response categories for the high and low LPC subject groups in the non-stressful and stressful situation are shown in Table 2. The results for this sample are similar to sample 1 with two exceptions:

the results for hypothesis 1 did not achieve statistical significance; the interpersonal portion of hypothesis 3, which was not statistically significant in the first sample, was found to be significant in the second sample.

Combined Results

Since samples 1 and 2 were independent and the number of subjects in each experimental treatment were relatively small, the results for both samples were combined using a method developed by Gordon, Loveland, and Cureton (1952). The combined tests of significance derived from this method, as shown in Table 3, strengthened the results obtained for each sample separately.

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Insert Table 3 About Here
- - - - - - - - - - - - - -

The combined results clearly show that the task aspects of the three hypotheses were supported, while the interpersonal relations aspects of these hypotheses were not as clearly supported. However, the results of this study in general support the conceptual model and the findings of Nealey (Fiedler, 1971), Ayer (1968), and Mitchell (1969) concerning the behavior of high and low LPC individuals in non-stressful situations and Fiedler's (1967) contingency model interpretation of the LPC in stressful situations.

SUMMARY AND CONCLUSION

The purpose of this study was to test the notion that the perceived stressfulness of a situation moderates the behavior of high and low LPC individuals, and thereby helps to explain the inconsistent findings reported by several researchers regarding the behavior of high and low LPC

individuals. A conceptual model was presented which combined the findings of Mitchell (1969) for a non-stressful situation and of Fiedler (1967) for a stressful situation.

Three hypotheses derived from the model were tested with two independent samples of highway engineers. Results from both samples analyzed separately and in combination generally supported the hypotheses that: (a) in non-stressful situations a high LPC individual exhibits more task behavior than a low LPC individual, while the low LPC individual exhibits more interpersonal relations behavior, and (b) in stressful situations a high LPC individual exhibits more interpersonal relations behavior and the low LPC individual more task behavior. In terms of the conceptual model, the stressfulness of the situation does appear to moderate the behavior of high and low LPC individuals.

This finding, while strengthened by the use of a physiological measure of stress, needs further testing in a variety of situations before a viable generalization can be drawn. However, it does suggest that more attention needs to be directed at the leader's perception of situational stress rather than the researcher's estimate of situational stress. Also, whether the observed behaviors of high and low LPC subjects in this study in the stressful situation were due to a restriction of the cognitive field alone or to the interaction of perceptual/cognitive and motivational components is not clear. These issues need to be explored in future research.

REFERENCES

APPLEY, M.H., & TRUMBULL, R. Psychological stress. New York: Appleton, 1967.

AYER, J. G. Effects of success and failure of interpersonal and task performance upon leader perception and behavior. Urbana, Illinois: University of Illinois, Group Effectiveness Laboratory, 1968. (Mimeo)

BASS, A. R., FIEDLER, F. E., & KRUEGER, S. Personality correlates of Assumed Similarity (ASo) and related scores. Urbana, Illinois: University of Illinois, Group Effectiveness Laboratory, 1964. (Mimeo)

BROCK, T. C. Cognitive restructuring and attitude change. Journal of abnormal and social psychology, 1962, 64, 264-271.

COHEN, S. I. Central nervous system functioning in altered sensory environments. In M. H. Appley and R. Trumbull (Eds.), Psychological stress. New York: Appleton, 1967, 77-118.

CRONBACH, L. Essentials of psychological testing. (2nd ed.) New York: Harper, 1960.

FIEDLER, F. E. Leader attitudes and group effectiveness. Urbana, Illinois: University of Illinois Press, 1958.

FIEDLER, F. E. Leadership and leadership effectiveness traits: a reconceptualization of the leadership trait problem. In L. Petrullo and B. M. Bass (Eds.), Leadership and interpersonal behavior. New York: Holt, Rinehart, and Winston, 1961, 179-186.

FIEDLER, F. E. A theory of leadership effectiveness. New York: McGraw-Hill, 1967.

FIEDLER, F.E. Personality, motivational systems and behavior of high and low LPC persons. Seattle, Washington: University of Washington Technical Report 70-12, September, 1970.

FIEDLER, F.E. Validation and extension of the contingency model of leadership effectiveness: a review of empirical findings. Psychological bulletin, 1971, 76, 128-148.

FREDERIKSEN, N., SAUNDERS, D. R., & WARD, Barbara. The in-basket test. Psychological monographs, 1957, 71, (9, Whole No. 438).

FREDERIKSEN, N. Factors in in-basket performance. Psychological monographs, 1962, 76, (22, Whole No. 541).

FREDERIKSEN, N. Validation of a simulation technique. Organizational behavior and human performance, 1966, 1, 87-109.

GORDON, M. H., LOVELAND, E. H., & CURETON, E. E. An extended table of chi-square for two degrees of freedom, for use in combining probabilities from independent samples. Psychometrika, 1952, 17, 311-316.

HAYWOOD, H. C. Novelty seeking behavior as a function of manifest anxiety and physiological arousal. Journal of personnel, 1962 30, 63-73.

HARRISON, J., & MACKINNON, P. Physiological role of the adrenal medulla in palmar anhidratic response to stress. Journal of applied physiology, 1966, 21, 88-92.

JOHNSON, J., & DABBS, J., JR. Enumeration of active sweat glands: a simple physiological change. Nursing research, 1967, 16, 273-276.

LAZARUS, R. S. Psychological stress and the coping process. New York: McGraw-Hill, 1966.

MCGRATH, J. E. (Ed.) Social and psychological factors in stress. New York: Holt, Rinehart, and Winston, 1970.

MITCHELL, T. R. Leader complexity, leadership style and group performance. Unpublished doctoral dissertation, University of Illinois, 1969.

MITCHELL, T. R. Leadership complexity and leadership style. Journal of personality and social psychology, 1970, 16, 166-174.

MONTAGNA, W. Structure and function of skin. (2nd ed.) New York: Academic Press, 1962, 364.

OSGOOD, C. E., SUCI, G. J., & TANNEBAUM, P. H. The measurement of meaning. Urbana, Illinois: University of Illinois Press, 1957.

SELLS, S. B. On the nature of stress. In J. E. McGrath (Ed.), Social and psychological factors in stress. New York: Holt, Rinehart, and Winston, 1970.

SUTARMAN & THOMSON, M. L. A new technique for enumerating active sweat glands in man. The journal of physiology, 1952, 117, 51p-52p.

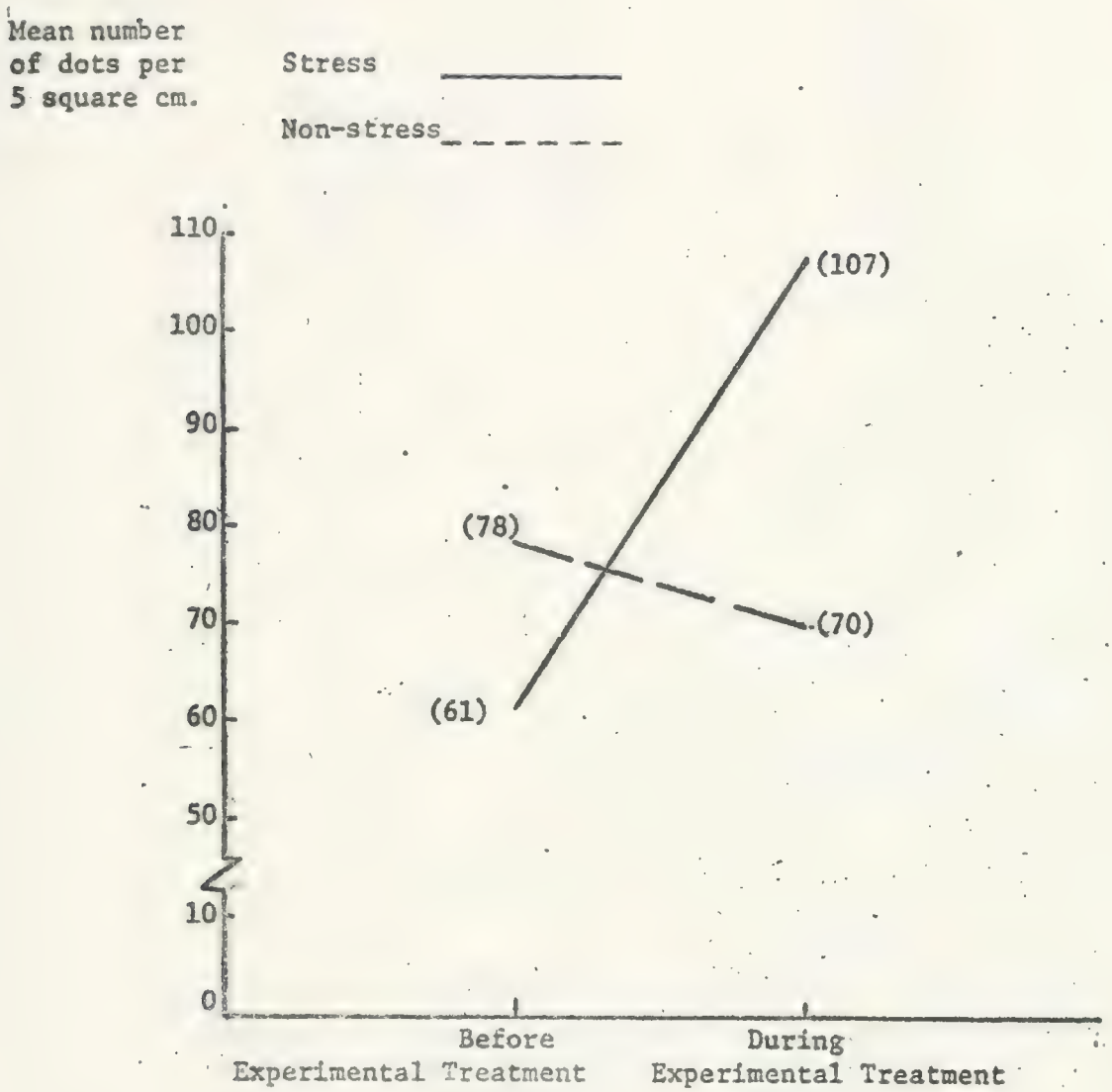

FIG. 1. Sample 1. Mean number of fingerprint dots (active palmar sweat glands) before and during experimental treatment for stress and non-stress groups.

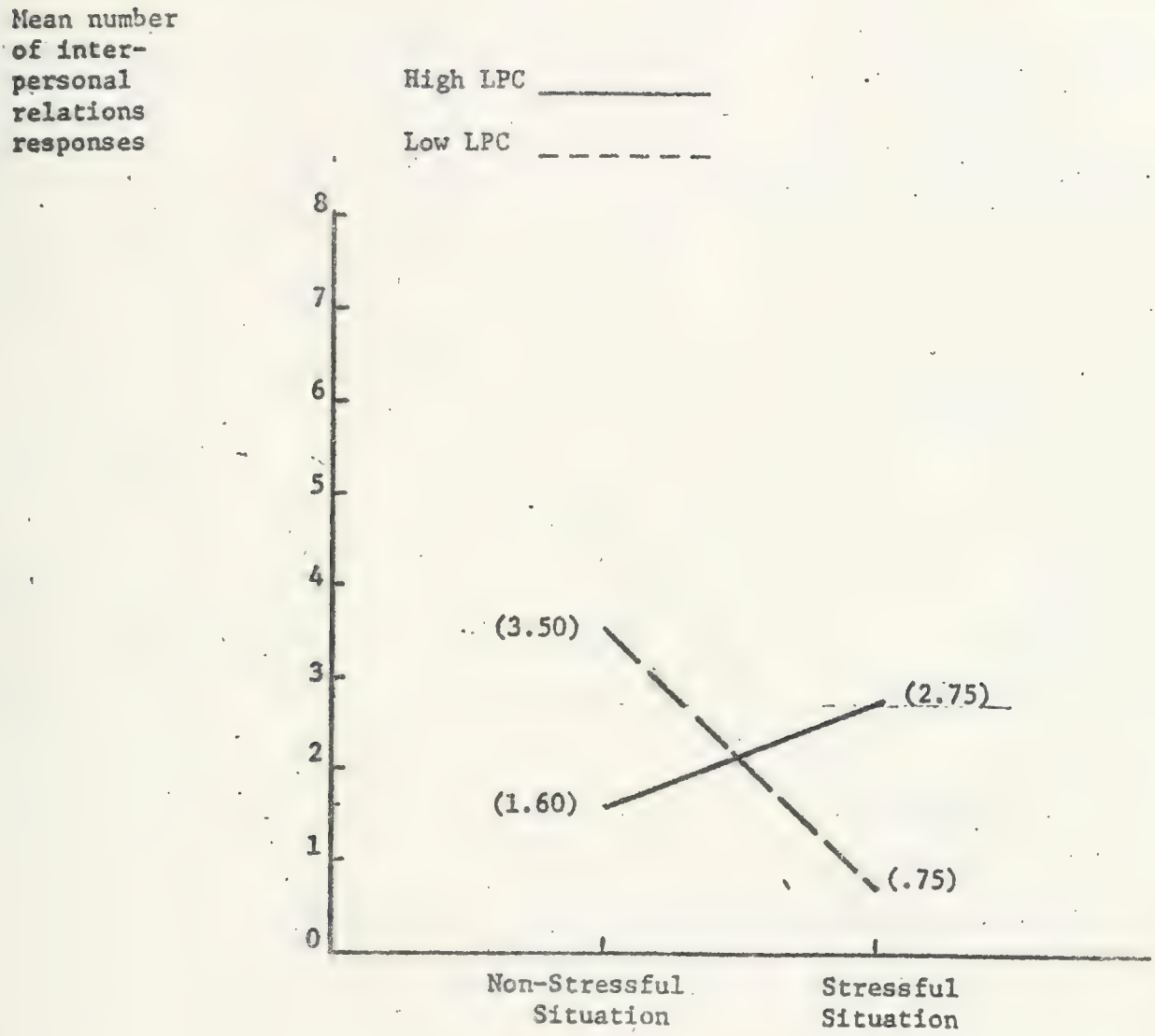

FIG. 2. Sample I. Mean number of interpersonal relations responses of high and low LPC subjects in the stressful and non-stressful situation.

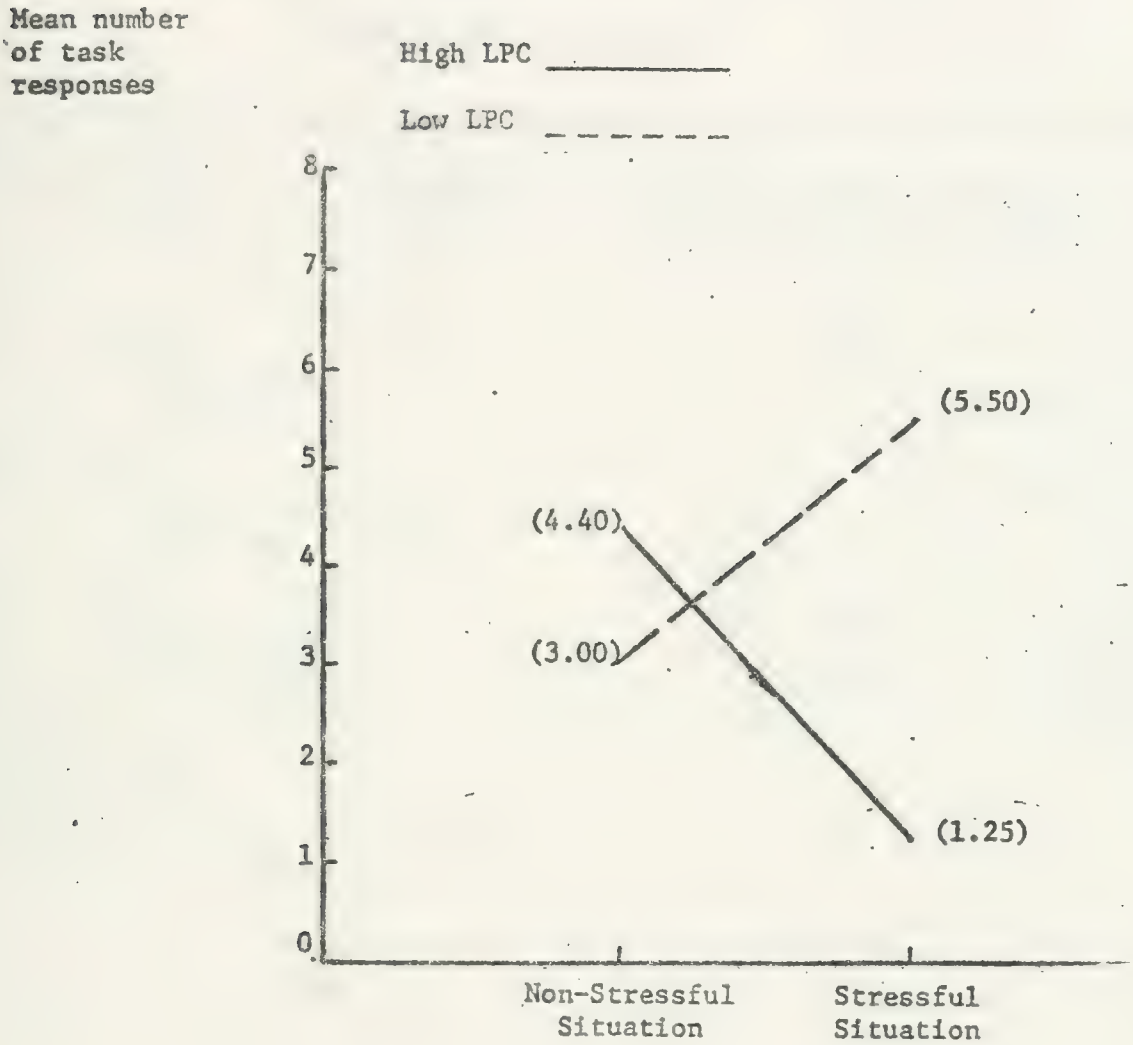

FIG. 3. Sample 1. Mean number of task responses of high and low LPC subjects in the stressful and non-stressful situation.

TABLE 1

Comparison of Mean Task and Interpersonal Relations Responses to In-Basket Items for Stress and Non-Stress Groups in Sample 1

Hypotheses	Response Categories	Non-Stressful Situation		Stressful Situation		t Scores
		High LPC N=5	Low LPC N=5	High LPC N=4	Low LPC N=4	
1	Task	4.40		1.25		4.424***
	Interpersonal relations		3.5		.75	2.459**
2	Task		3.0		5.50	1.977*
	Interpersonal relations	1.60		2.75		.892
3	Task			1.25	5.50	4.901***
	Interpersonal relations			2.75	.75	1.571

*$p \leq .05$ one tail
**$p \leq .025$ one tail
***$p \leq .005$ one tail

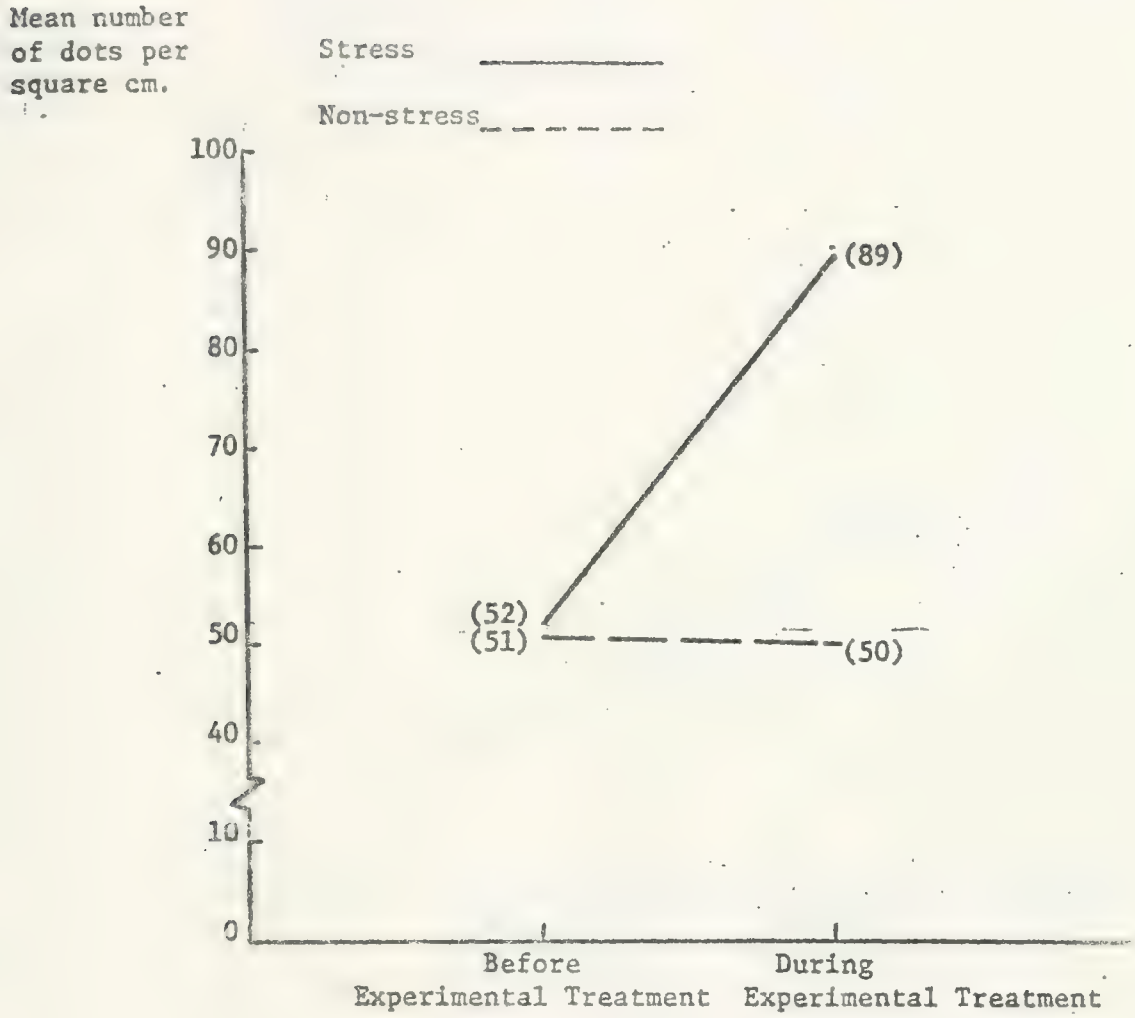

FIG. 4. Sample 2. Mean number of fingerprint dots (active palmar sweat glands) before and during experimental treatment for stress and non-stress groups.

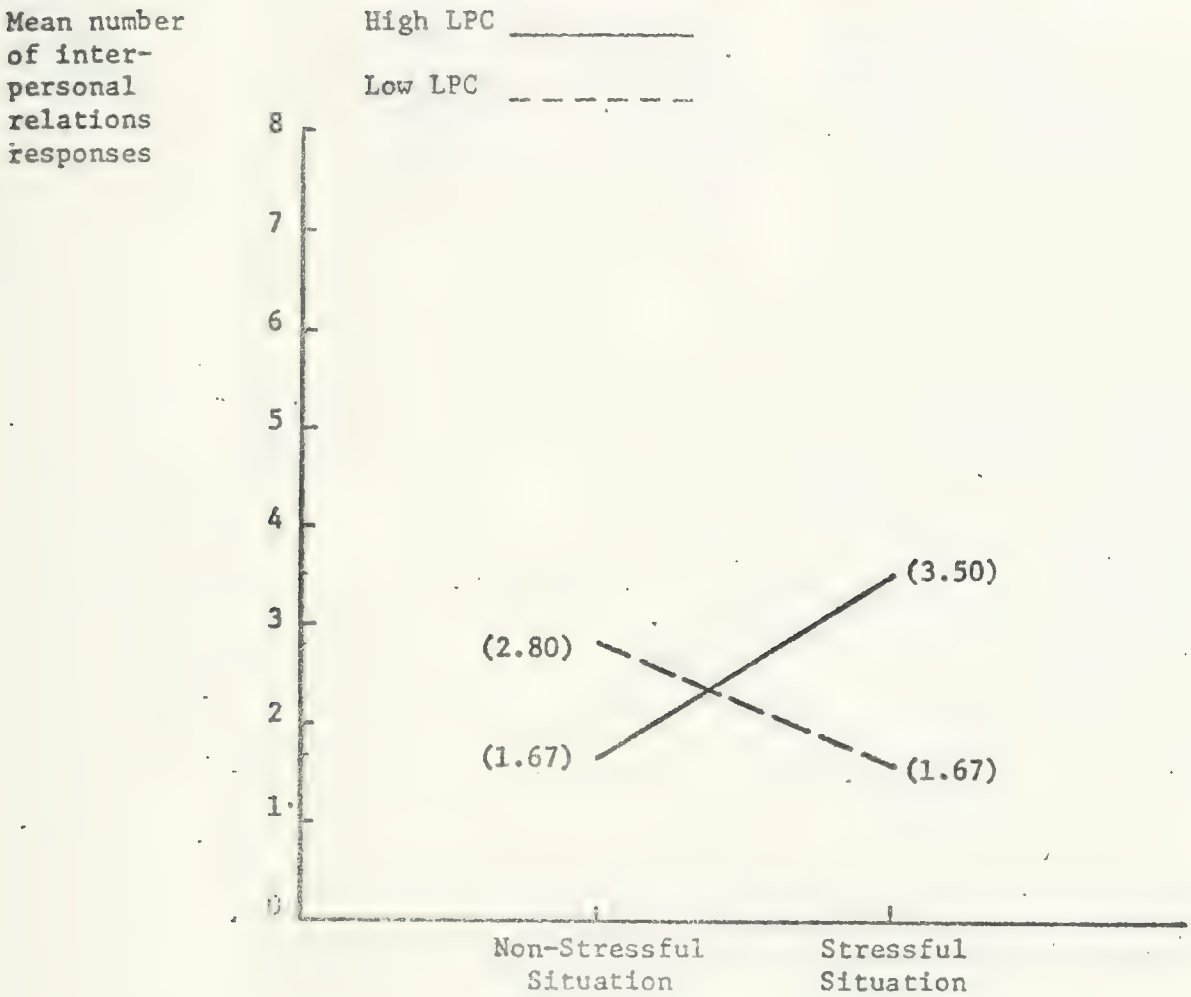

FIG. 5. Sample 2. Mean number of interpersonal relations responses of high and low LPC subjects in the stressful and non-stressful situation.

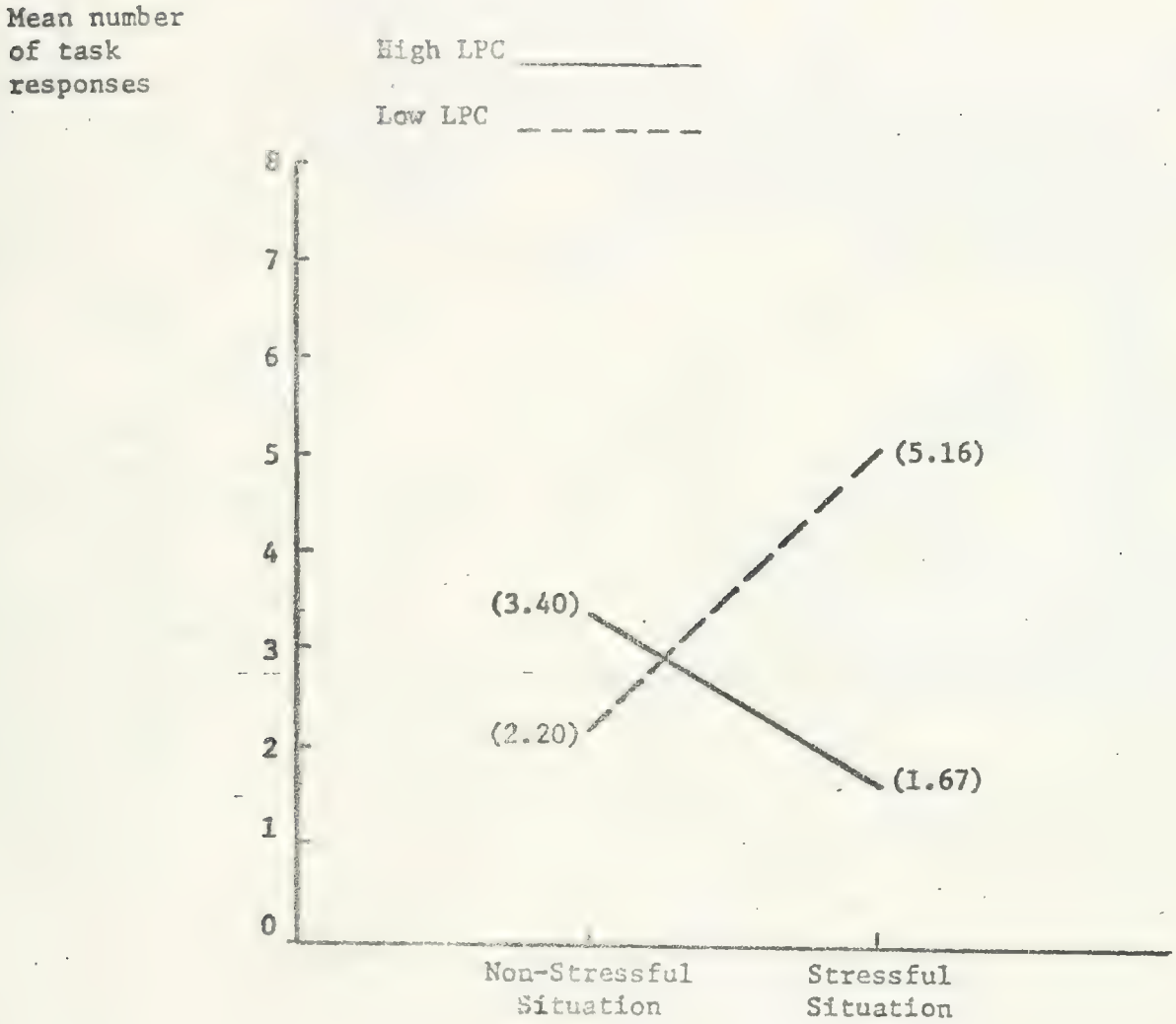

FIG. 6. Sample 2. Mean number of task responses of high and low LPC subjects in the stressful and non-stressful situation.

TABLE 2

Comparison of Mean Task and Interpersonal Relations Responses to In-Basket Items for Stress and Non-Stress Groups in Sample 2

Hypotheses	Response Categories	Non-Stressful Situation		Stressful Situation		t Scores
		High LPC N=5	Low LPC N=5	High LPC N=6	Low LPC N=6	
1	Task	3.4		1.67		1.557
	Interpersonal relations		2.8		1.67	1.059
2	Task		2.2		5.16	3.507**
	Interpersonal relations	1.67		3.5		1.520
3	Task			1.67	5.16	3.895**
	Interpersonal relations			3.5	1.67	1.808*

*$p \leq .05$ one tail
**$p \leq .005$ one tail

TABLE 3

Combined Probabilities of Task and Interpersonal Relations

Responses to In-Basket Items for

Stress and Non-Stress Groups in Samples

1 and 2

Hypotheses	Samples	Response Categories	t Scores	ps	Σ of the Corresponding X^2	ps for X^2
1	1	Task	4.424	.005	15.2018	.005
	2		1.557	.01		
	1	Interpersonal relations	2.459	.025	11.9830	.025
	2		1.059	.10		
2	1	Task	1.977	.05	16.5881	.005
	2		3.507	.005		
	1	Interpersonal relations	.892	.25	7.3278	.10
	2		1.520	.10		
3	1	Task	4.901	.005	21.1932	.001
	2		3.895	.005		
	1	Interpersonal relations	1.571	.10	10.5967	.05
	2		1.808	.05		