A correlational analysis of sme non-job activities of an industrial population

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A CORRELATIONAL ANALYSIS OF SOME
NON-JOB ACTIVITIES OF AN
INDUSTRIAL POPULATION

A Thesis
Presented to the
Department of Psychology
and the
Faculty of the Graduate College
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In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
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June, 1970
Accepted for the faculty of The Graduate College of the University of Nebraska at Omaha, in partial fulfillment of the requirements for the degree Master of Arts.

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Abstract

Herzberg's Motivator-Hygiene Theory has had a significant impact on human motivation research; however, several factors related to the theory have been overlooked. The purposes of this thesis were to develop an objective instrument with which to measure job satisfaction and job dissatisfaction; to determine how an employee would react when his motivator and hygiene needs are frustrated; and to look at the relationship between job satisfaction and job dissatisfaction and certain personality, intellectual and environmental factors.

It was hypothesized that participation in non-job activities would be directly related to an individual's frustration with the motivator and hygiene factors of his work. Participation in non-job activities was also hypothesized to be directly related to one's belief in his control over events. Furthermore, it was hypothesized that job frustration was a function of intellectual functioning and job complexity.

The Ss in this research consisted of 100 male employees of a midwest fixture manufacturing corporation. The data were gathered by means of a survey technique as well as from employee work records.

The results of the data analysis supported the direct relationship hypothesized between non-job activities and belief in the control of reinforcements (p < .01). Partial support was obtained for the validity of the instrument designed to measure job satisfaction and job dissatisfaction,
but no support was obtained for the remaining hypotheses ($\alpha \leq 0.05$).

Due to the correlational nature of the present investigation it is difficult to explain the lack of support for two of the hypotheses. Several possibilities exist: the instruments used may have been invalid or of limited utility; the population used may have been atypical; or the hypotheses were simply false. Possible remedies for these shortcomings are given and suggestions for future research are presented.
Acknowledgements

"No man stands as an island ..." this phrase has never been more relevant for me than during the course of writing this thesis. I want to express my gratitude to the many individuals who have so unselfishly assisted me during the course of this research. I would especially like to express my appreciation and gratitude to the following people:

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CHAPTER I

Introduction

One of the most significant developments in the area of human motivation research has been the development of the Motivator-Hygiene Theory by Herzberg, Mausner and Snyderman (1959). This theory suggests that man has two need systems: an avoidance system, and a personal growth system. The avoidance need system pertains to man's need as an animal to avoid pain, while the personal growth need system concerns his human needs for psychological growth.

The Motivator-Hygiene Theory represents a significant departure from the traditional conceptualization of satisfaction and dissatisfaction. Typically, these factors are viewed as two extremes of a single, bi-polar continuum (Figure 1).

\[ \begin{align*}
\text{DISSATISFACTION} & \quad \rightarrow \quad \text{SATISFACTION} \\
\end{align*} \]

Figure 1. Traditional model of satisfaction and dissatistaction
The traditional model is based on the notion that the presence of certain factors such as money, opportunity for advancement, good working conditions, job status, etc., contribute towards feelings of job satisfaction. Conversely, the absence of these factors promotes feelings of dissatisfaction.

Herzberg, et al. (1959), have cast serious doubts on such a model. These investigators believe the best model to use is one composed of two uni-polar continua, as displayed in Figure 2.

While this theory evolved from a study involving a well educated, homogeneous population (i.e., 203 accountants and engineers), numerous investigators have successfully validated the theory on a wide range of populations. As in the original research, these validation studies support the three main tenets of the Motivator-Hygiene Theory: (a) that the factors
which promote feelings of satisfaction are distinct from those factors which contribute to feelings of dissatisfaction; (b) that the factors which promote satisfaction are intrinsic job factors or factors inherent in the content of the work (i.e., recognition, achievement, advancement, growth, responsibility, and an interesting job); and (c) that the factors which contribute to dissatisfaction are extrinsic job factors or factors inherent in the context of the job (i.e., status, security, supervision, company policy, working conditions, and co-workers).

One of the earliest studies on the validity of Herzberg's theory was conducted by Schwarz (1959) using 373 middle management personnel. Schwarz used a methodology very similar to the critical-incidents technique employed by Herzberg. Specifically, Schwarz asked the following questions:

1. Occasionally, something happens to the (title of the job) that makes him feel particularly well satisfied with his job, and that stimulates him to contribute even more. Think of a time something like this happened to you.

2. Occasionally, something interferes with the (title of the job) efforts to carry out his job effectively. Think of the most recent time you experienced this kind of frustration.

A content analysis of the responses obtained from the first question indicated that 80% of the responses coincided with Herzberg's motivator factors; that is, 80% of the factors which induced satisfaction in the middle managers of Schwarz's study were identical to the factors which the accountants and engineers in Herzberg's study reported as responsible for their feelings of satisfaction. Furthermore, 76% of the middle managers'
replies concerning what frustrated them or made them dissatisfied coincided
with Herzberg's hygiene or dissatisfier factors.

While the Schwarz study represents a systematic replication of the
Herzberg et al. (1959) study, the replication conducted by Saleh (1963)
was of a more direct nature in that the methodology employed by this in­
vestigator was identical to that used in the original study. Saleh utilized
85 managers from several types of companies. An interesting feature of
this study is that the Ss ranged in age from 63 to 65 years; that is, they
were "pre-retirees." The results of this investigation support Herzberg's
findings: 89% of the factors which the pre-retirees identified as inducing
satisfaction were identical to Herzberg's motivation factors. Sixty-seven
percent of the factors inducing dissatisfaction coincided with Herzberg's
hygiene factors.

In an effort to validate the Motivator-Hygiene Theory on a non-
managerial population, Meyers (1964) used several different types of
workers from one organization. Specifically, his sample consisted of
50 scientists, 55 engineers, 50 manufacturing supervisors, 75 male
technicians, and 52 female hourly assemblers. In addition to using a
wide range of occupations, Meyers also employed a method of response
coding which was different from that used by Herzberg et al. (1959).
Meyers chose to code only the one factor in each response which appeared
to be the most important. For example, if S was asked to think of a time
when he felt particularly good about his job (i.e., the critical incident
technique used by Herzberg), and his responses connoted responsibility
more than any other factor, then only this factor was coded. In the original study every factor mentioned was coded. The results of Meyers' study support Herzberg's theory: for all occupational categories represented, the factors which made Ss feel good or satisfied were, in 70% or more of the cases, identical to Herzberg's motivator factors. Also, the factors which made them feel dissatisfied with their jobs were, in 61% or more of the cases, the same as Herzberg's hygiene factors.

Another study which used non-managerial Ss was conducted by Gendel (1965). The Ss were 119 housekeeping workers at two veterans' hospitals. Utilizing an interviewing technique synonymous with Herzberg's, Gendel found positive support for the Motivator-Hygiene Theory. Specifically, 78% of the factors mentioned by the Ss as the source of satisfaction were the same as Herzberg's motivator factors. Seventy-six percent of the factors which the Ss claimed made them dissatisfied with their work were identical to the hygiene factors.

Several attempts have been made to construct a psychometric instrument with which to measure motivator and hygiene factors. One such attempt was instigated by Hamlin and Nemo (1962). These investigators constructed a questionnaire consisting of 30 items similar to the following statement:

If you could be a good airplane pilot or a good bank teller, which would you rather be? Why?

The responses made concerning why a particular occupation was chosen are content analyzed for the presence of motivator and hygiene factors. Unfortunately, this instrument has two serious drawbacks. First,
it is subjective in nature and the content analyses are subject to much variation. Second, this instrument measures only hygiene and/or motivator orientation, i.e., only the individual's basic outlook or orientation to life is measured. The Hamin and Nemo instrument makes no attempt to ascertain the extent to which a given individual is satisfied or dissatisfied with his present situation.

In an attempt to alleviate one of the difficulties inherent in Hamin and Nemo's instrument, Kahoe (1966) devised the Job Motivation Inventory (JMI) which consists of 72 items similar to the following statement:

Belonging to a friendly group of workers

1 2 3 4 5

The respondent is required to indicate how important each of the 72 items is to him, with a "1" indicating no importance, and a "5" representing extreme importance. The JMI represents a step towards the objective measurement of motivator and hygiene factors; however, like the Hamlin and Nemo instrument, the JMI measures only orientation.

A number of studies have been conducted which have not supported the Motivator-Hygiene Theory. Generally, this contradictory research may be divided into three categories: (a) those studies that criticize the theory on methodological grounds; (b) those that criticize the theory on theoretical grounds; and (c) those that criticize the theory due to misinterpretation.

Those investigators critical of the methodology which Herzberg et al. (1959) used in the formulation of the Motivator-Hygiene Theory (i.e., the critical incidents technique) have what appears to be a valid criticism.
Briefly stated, these investigators (Ewen, 1964; Vroom, 1964) believe that Herzberg's results are "method bound"; that is, that the Ss' responses were predetermined by the subjective nature of the method used in the collection and analysis of the data. This contention appears to be supported by a review of the literature conducted by Soliman (1969). This investigator found that while the evidence for and against the theory is about evenly divided (20 studies support the theory and 21 do not), most of the studies supporting the theory (17 out of 20) used Herzberg's technique or a modified form of it while most of the research which contradicts the theory (18 out of 21) used a different technique. Hence it appears that this criticism is a valid one, and that additional research in this area is needed. Indeed, one of the main purposes of this thesis is to present research on an instrument which purports to objectively measure Herzberg's motivator and hygiene factors.

Research conducted by investigators who have criticized the Motivator-Hygiene Theory on theoretical grounds either claim that the motivator and hygiene factors are not independent (Malinovsky and Barry, 1965; Ewen, Smith, Hulin and Locke, 1966; Graen, 1966a and 1966b; Burke, 1966; Hulin and Smith, 1967; Hinrichs and Mischkind, 1967; Lindsay, Marks and Gorlow, 1967), or that the Motivator-Hygiene Theory regards situational factors (i.e., job content and job context) as the sole determinant of job attitudes, disregarding the role played by cultural and background factors (Friedlander, 1963, 1965, 1966; Centers and Bugental, 1966; Hulin, 1966).
In regard to the criticism that the motivator and hygiene factors are not independent, it should be pointed out that none of the studies which support the Motivator-Hygiene Theory (including those done by Herzberg) suggest that these two factors are truly orthogonal. What the research does indicate is that a "significant majority" of the variables which Ss have reported as responsible for promoting feelings of satisfaction were motivator factors, and that a "significant majority" of the variables responsible for feelings of dissatisfaction were hygiene factors. Perhaps Herzberg should clarify this point by specifying that his two-factor model (see Figure 2) is merely a pictorial display and not a mathematical paradigm.

Investigators who have criticized the Motivator-Hygiene Theory because it neglects the role which cultural and background factors play, contend that these variables are at least as important as situational variables (i.e., job content and job context) in shaping worker attitudes. Typical of this line of research is the study conducted by Friedlander (1965) which indicated that task-centered variables (i.e., motivators) were most prepotent in the white collar workers' need hierarchy whereas environmental factors (i.e., hygiene) were most important to blue collar workers. Furthermore, those investigators who advance this criticism contend these differences reflect basic sociological differences between these two classes of workers, and that these differences seriously limit the generalizability of the Motivator-Hygiene Theory. However, these investigators have failed to realize that although these two classes of workers may have different value systems which may reflect basic sociological differences,
several studies (Gibson, 1961; Meyers, 1964; Gendel, 1965) have shown that motivators are primarily responsible for feelings of satisfaction and hygiene factors are largely responsible for feelings of dissatisfaction, regardless of the workers' occupational level or sociocultural background.

A great deal of criticism has been directed at the Motivator-Hygiene Theory by investigators who either misinterpreted the theory or used faulty logic in the design of their experiments (Ewen, 1964; Ott, 1965; Lindsay, 1965; Dunnette, 1965; Malinovsky and Barry, 1965; Graen, 1966a, 1966b; Wernimont, 1966; Ewen, Smith, Hulin and Locke, 1966). One misinterpretation of the theory which has been frequently made is the assumption that the hygiene factors contribute nothing to overall satisfaction. Several investigators have made this assumption, and after finding positive correlations between hygiene factors and overall satisfaction they have concluded that the traditional model (see Figure 1) is more appropriate for representing the relationship between satisfaction and dissatisfaction than is Herzberg's two-factor model. However, Herzberg (1966, Chapter 6) has stated that both hygiene and motivator factors contribute to an individual's overall feelings about his job; Whitsett and Winslow (1967) have also pointed out:

... Motivator-Hygiene Theory would predict that both motivator and hygiene factors contribute to overall satisfaction. It makes no sense to say that, if a man is unhappy with his working conditions, this will not have a negative effect on his overall feelings toward his job. Motivator-Hygiene Theory would not predict this and neither, we hope, would anybody else.

Another commonly made error concerns the design of the instruments
which various investigators have used to test the Motivator-Hygiene Theory.

Some of the errors which have been made are: too few items; items pertaining to only a few of the motivator and hygiene factors (Lindsay, 1965; Ewen, et al. (1966)); items worded in the present tense while Ss were required to think of past events (Wernimont, 1966); items which were irrelevant (Dunnette, 1965); and instruments which contained items pertaining almost exclusively to one of the two factors (Ott, 1965).

In view of the preceding comments it appears reasonable to assume that the Motivator-Hygiene Theory is valid. However, a valid, reliable, and objective method of measuring the extent to which motivator and hygiene factors are present in a given situation is needed.

Statement of the Problem

Although numerous studies have focused on Herzberg's Motivator-Hygiene Theory, two important problems related to the theory have been neglected. One of these concerns the method of assessment. No one has yet devised an instrument which validly and objectively measures the degree to which motivator and hygiene factors are present in a given situation, i.e., the extent to which an individual is satisfied or dissatisfied with his work. Up to the present time the methods used to assess motivator and hygiene factors have been either of a subjective nature or they have measured orientation rather than an individual's attitudes about his present situation. The first problem may be stated as follows: is there an objective method whereby satisfaction and dissatisfaction, as defined by
Herzberg's Motivator-Hygiene Theory, can be measured?

The second problem concerns the behavior pattern displayed by an individual when his motivator and/or hygiene needs are not met. Specifically, the problem is: what happens when an individual seeks satisfaction from his job, and/or attempts to relieve his dissatisfaction but is thwarted in such strivings? Will such circumstances cause an individual to react, and if so, how?

To summarize the problems under investigation in this research consist of developing an objective instrument which will determine whether or not an individual is receiving the motivator and hygiene factors which he desires, as well as exploring the nature of his reactions if such needs are frustrated.

**Purposes of this Research**

There are three main purposes underlying this research: (a) to present research on an objective instrument which purports to measure job satisfaction and job dissatisfaction as defined by Herzberg's Motivator-Hygiene Theory; (b) to investigate various non-job activities of industrial workers in an attempt to ascertain the relationship between such activities and job satisfaction and dissatisfaction; and (c) to investigate the extent to which intellectual, personality, and environmental factors influence an employee's participation in non-job activities.

**Hypotheses**

Hypothesis I: There is a direct relationship between the degree
to which a worker is frustrated with his job and the extent to which he participates in non-job activities

The degree to which an employee is frustrated by his job is measured by the Employee Attitude Questionnaire (EAQ), an instrument developed by Nevotti, Olson and Stevenson (1969), and which represents a substantially modified version of Kahoe's Job Motivation Inventory, (Kahoe, 1966). The EAQ, which may be found in Appendix A, is based on Herzberg's Motivator-Hygiene Theory and purports to measure job satisfaction and job dissatisfaction.

Non-job activity refers to those activities in which the employee engages which are outside of his formal job. These include such things as home and community involvement, union participation, religious and athletic activities, participation in formal social organizations, and individual hobbies and activities. This variable (i.e., non-job activity) is measured by the Activities Questionnaire, an instrument developed specifically for this research, and may be found in Appendix D.

The notion implicit in Hypothesis I is that when an employee seeks a certain level of satisfaction from his work and is thwarted, and/or expects a certain work context and does not get it, that he will react by seeking satisfaction and/or relief from his dissatisfaction by participating in some sphere of activity other than his formal job (e.g., unions, home and community activities, etc.).

The rationale underlying this hypothesis might be construed to be an example of displacement. Whatever the underlying dynamics,
this hypothesis attempts to ascertain what an individual is likely to do when his job frustrates his strivings for satisfaction and/or fails to provide him with the job context which he desires.

The literature concerning the relationship between job satisfaction, job dissatisfaction, and non-job activities, is ambiguous. Much of this ambiguity stems from the various ways in which investigators have defined and measured job satisfaction and job dissatisfaction. The confusion which has resulted from the various definitions and measures of satisfaction and dissatisfaction is aptly pointed out in Herzberg, Mausner, Peterson, and Capwell's (1957) review of the literature on job attitudes.

Support for the notion that the relationship between job satisfaction-dissatisfaction and non-job activity is an ambiguous one may be gained from an examination of the literature concerning union participation—a significant form of non-job activity. As Spinrad (1960) has pointed out, "... Union involvement can make the job situation much more pleasant by providing an area for creativity, interpersonal influence, and an avenue for status not found in the job itself."

Spinrad's statement leads to the assumption that employees who fail to get satisfaction from their jobs will become active participants in union affairs as a means of compensation. However, a review of the literature indicates that this is a tenuous assumption. For example, Dean (1954) found a positive relationship between job satisfaction and union participation. This finding appears antithetical to both Spinrad's statement and the first hypothesis. However, a close examination of this study yields
an interesting fact: this conclusion was drawn from the results of one interview question (i.e., "How well do you like the actual job operation you perform at (your plant)?"). In view of this limited definition of job satisfaction, as well as the subjective method used, Dean's conclusion should be viewed with skepticism.

Form and Dansreau (1957) also reported finding a positive relationship between job satisfaction and union activity. However, these investigators based their index of job satisfaction on "plant integration." This nebulous term refers to the degree to which an employee believes he is integrated into the plant where he works, and this in turn supposedly reflects the extent to which an individual is satisfied with his job and department as a place to work. As in the study by Dean, this definition of job satisfaction is ambiguous.

Tannenbaum and Kahn (1958, page 229) reported that union activists tend to be more satisfied with their jobs than non-activists. This conclusion is based on the results from one question: "In comparison with other members of the local, do you have a better job, a worse job, or about the same sort of job?" However, conclusions based on this question concerning an individual's feelings of job satisfaction are ambiguous, and subject to the same problems as the techniques of Dean, and Form and Dansreau.

Two additional studies concerning the relationship between job satisfaction and union activity have yielded results which are indicative of the confusion in this area. Strauss and Sayles (1952) found no correlation
between job satisfaction and union participation. In a later study, however, these investigators found a very low correlation between union activity and expressed dissatisfaction with working conditions (Sayles and Strauss, 1967, page 110).

The conclusion which [E] has drawn from the above studies is that although several investigators have reported finding a positive relationship between union participation and job satisfaction, the ambiguous manner in which job satisfaction has been defined and measured in these studies, as well as the research methods used render these findings equivocal and indicate a need for additional research.

In addition to union participation, it appears logical to assume that an employee who is frustrated in his strivings for satisfaction and/or is dissatisfied with the contextual aspects of his job might participate in other non-job activities such as athletic teams, home and community involvement, formal social organizations, etc. in an attempt to gain satisfaction and/or relieve his dissatisfaction.

Various theorists in social psychology attribute participation in activities such as these to a number of factors. In a review of the literature, Krech, Crutchfield and Ballachey (1962, page 394) have found that the needs for power and belonging offer the best explanation for participation in groups such as those mentioned above. In their review of this area Secord and Backman (1964, Section 3) indicate that social interaction evolves from interpersonal attraction and the need for social power and status.
In regard to these various needs and drives which underlie certain forms of social interaction such as union participation, religious and athletic activities, participation in formal social organizations, and community involvement, one might ask what factors make these needs become acute, as well as why they function at different levels of strength in different people. Hypothesis I is designed to suggest one possible answer to these questions; that is, it is hypothesized that the need to participate in non-job activities is a function of the degree to which an employee perceives his job as providing him with the intrinsic and extrinsic job factors which he desires. It should be emphasized, however, that job frustration is a necessary but not sufficient condition for significant participation in non-job activities.

Hypothesis II: There is a direct relationship between the extent to which an employee participates in non-job activities and the degree to which he believes he can influence and control events.

This hypothesis is designed to predict which employees have a propensity for action-taking behavior and hence are more likely to react overtly when their strivings for job satisfaction are frustrated. It should be pointed out that an internal orientation as well as job frustration are predicted as being necessary and sufficient conditions for non-job activity.

The rationale underlying this hypothesis stems from research conducted by Rotter, Seeman and Liverant (1962, Chapter 22) concerning the locus-of-control-of-reinforcements concept. This concept refers to the generalized expectancy which an individual develops regarding the extent to which events are under his control or are the result of his own skills.
and capacities. Rotter, Liverant and Crowne (1961) have developed the Internal versus External Control of Reinforcements Scale (I-E Scale) which purports to measure the extent to which an individual perceives events as determined by his own behavior, skills or characteristics (internally oriented); versus the degree to which he sees events as determined by luck, chance, fate, or the manipulation of others (externally oriented).

The I-E Scale, which has been labeled the Social Reaction Inventory to disguise its purpose, is enclosed in Appendix C.

The first research undertaken to validate this concept was conducted by Seeman and Evans (1962). These investigators found that an individual's generalized expectancy for control of events is relevant to his behavior. Specifically, it was found that those Ss (hospitalized TB patients) who believed their own behavior could determine the occurrence of reinforcements (i.e., internally oriented) actively sought to learn more about their condition than did patients who had an external orientation.

Seeman (1963) investigated internal-external orientation and its relationship to incidental learning. Using reformatory inmates as Ss, he found a positive correlation between internal orientation and the quantity of information remembered concerning how the reformatory was run, terms of parole, and long range economic facts which might effect the Ss after they left the reformatory. These results were independent of intelligence but were not independent of the amount of time the Ss had left to serve of their sentences.

In a study concerning the willingness of Negroes to take part in a
civil rights demonstration, Gore and Rotter (1963) found further support for this theory. These experimenters found that social action-taking behavior could be predicted on the basis of scores on the I-E Scale. Those Ss who had an internal orientation indicated a greater willingness to take social action than Ss with an external orientation.

While Gore and Rotter merely examined attitudes toward social action-taking behavior, Strickland (1965) compared Negro activists with Negro non-activists, matching groups for education and socio-economic class. She found that the activists were significantly (p < .05) more internally oriented on the I-E Scale than the non-activists.

Evidence reported by Seeman (1964) indicates that this concept may be valid in other cultures. He investigated Swedish workers and found that membership in unions, activity within the unions, and a general knowledge of political affairs were significantly related to an internal orientation.

While Hypotheses I and II attempt to explore the manner in which certain attitudinal factors (i.e., satisfaction-dissatisfaction, internal-external orientation) affect employee behavior, nothing has been said concerning the roles which intellectual functioning and the job per se play in shaping employee behavior. Why, for example, is one employee more frustrated by his job than another worker even though they have identical jobs? Hypotheses IIIa and IIIb attempt to explore the interrelationship between job complexity, intellectual functioning and employee behavior.

Numerous studies have focused on this general area, but few have been concerned with the manner in which all three of these factors interact.
Typically, research in this area has been concerned with either the relationship between employee satisfaction and intelligence, or the relationship between job complexity and employee satisfaction. Furthermore, those studies which have been conducted in this area have used the traditional paradigm of job satisfaction and job dissatisfaction. The present research will employ Herzberg's Two-Factor Model to investigate the interrelationship among intelligence, job complexity, and job satisfaction and job dissatisfaction.

**Hypothesis IIIa:** For employees with below average intelligence there is a direct relationship between job complexity and job frustration.

**Hypothesis IIIb:** For employees with above average intelligence there is an inverse relationship between job complexity and job frustration.

Job complexity refers to the definition employed by Hulin and Blood (1968) in their review of the literature on job enlargement; that is, a complex job entails a high level of skill, varied work content, and relative autonomy for the worker. This factor was measured by the **Job Complexity Index** (JCI) which was designed by E, and is enclosed in Appendix E. It should be pointed out that the degree of complexity of a given job is, from an operational standpoint, synonymous to what several investigators (Hoppock, 1935; Super, 1939; Centers, 1948; Gurin et al., 1960) refer to as "occupational level"; that is, as one moves from a lower to a higher occupational level (e.g., production line attendant to tool and die mechanic) the complexity of one's job likewise increases.

Job frustration refers to the scores obtained from the EAQ, an
instrument discussed in greater detail in another section of this thesis. An index of the level of each employee's intellectual functioning was obtained through the use of the Wonderlic Personnel Test, Form D, (Wonderlic, 1966a). This instrument is likewise discussed at greater length in the second chapter. It should be emphasized that the terms "above average" and "below average" intelligence were operationally defined in this research; that is, all Ss who scored below the average (i.e., 19 or less) of the present sample were defined as "below average intelligence," whereas all Ss scoring above the average of this sample were defined as "above average intelligence."

One of the earliest studies to investigate the relationship between job complexity and employee attitudes was conducted by Hoppock (1935, page 255). Hoppock collected data from over 300 workers in a small Pennsylvania town, and found a direct relationship between job satisfaction and occupational level.

Super (1939) found a positive relationship between occupational level and job satisfaction; that is, those men with the most complex jobs were most satisfied with their work. Unfortunately, Super had a number of methodological difficulties: he assessed satisfaction by asking each S how satisfied he was with his opportunity to express himself in his work; he failed to control for intelligence; he studied an unrepresentative population (i.e., members of "hobby clubs"); and he received only a 30.3% return of his questionnaire.

In another study, concerning job complexity and employee attitudes,
Centers (1948), using a cross-section of the adult white male population (N = 1100), reached the same conclusions which Super found. In general, he found that the more prestigious and better paid the person's occupation, the more he is likely to be satisfied with his job. "There is an unmistakable tendency for persons in less advantageous positions to be more frequently dissatisfied." Furthermore, Centers found that the factors which most of the employees identified as the source of job satisfaction were freedom and independence, interesting and varied activity, and the nature of the work itself. However, Centers did not control for the effect of status and prestige, i.e., the definition of job complexity which he adopted may have confounded job status with job complexity.

In a two-year investigation of the relationship between type of work and employee motivation, Baldamus (1951) found an inverse relationship between skill level and turn-over rate. Specifically, he found an average annual turn-over rate of 680% for unskilled workers, and an approximate annual turn-over rate of 10% for skilled and semi-skilled workers. Furthermore, Baldamus found an inverse relationship between turn-over rate and training time, and an inverse relationship between turn-over rate and length of work cycle.

In an intensive study of the role which work plays in personal adjustment, Gurin, Veroff and Feld (1960, Chapter 6) investigated the relationship between occupational level and job satisfaction. As in the previous studies, these investigators found that those workers whose jobs require a high level of skill reported feeling more satisfied with their jobs than
did workers whose jobs required very little or no skill.

In reviewing studies of the type cited above one problem becomes readily apparent. If occupational level is directly related to worker attitudes, is this relationship due to the fact that jobs at higher occupational levels are truly more complex, or is it because such jobs are inherently more prestigious? To use Herzberg's terminology, does the worker merely feel less dissatisfaction because the job at the higher occupational level provides him with greater status and prestige (i.e., improves the hygiene or contextual aspects of his work), or is he truly more satisfied because the highly skilled job provides him with work which is inherently interesting and meaningful (i.e., improves the content or motivator aspects of his job)? Research cited below indicates that the latter answer is the more plausible one.

Morse (1953, pp. 66-67), in an investigation of the morale among white collar workers, interviewed 742 clerks and their 73 supervisors. She found that those workers with the more varied and skilled jobs were more satisfied with their work than clerks in routine, unskilled jobs. Note that this result is probably as free of the confounding effects of prestige as a study of this kind can be; that is, all the Ss were white collar clerks.

In a study concerning the relationship between job difficulty and employee attitudes, Svetlik, Prien and Barrett (1964), found a significant positive correlation between job difficulty and employee ratings of their feelings about their jobs, i.e., the more difficult the job, the better the S felt about it.
Hueber (1965) compared the turn-over rates of mechanics (i.e., "blue collar" workers) and clerks (i.e., "white collar" workers). He found that while the clerks had cleaner, more prestigious jobs, their turn-over rate was higher than the turn-over rate of the mechanics. Hueber explains this result in that the mechanics had an inherently interesting job, they could see the results of their work, and they received immediate reinforcement for their work. The clerks, however, had very few of these features.

Perhaps the most interesting study in this area was conducted by Conant and Kilbridge (1965). These investigators studied the effects of job enlargement (i.e., increasing the complexity of work) and found that workers in enlarged jobs produced work of a higher quality than did workers in simplified jobs (i.e., jobs low in complexity). Furthermore, the workers in the enlarged jobs reported that they liked their jobs more than did the workers in the less complex jobs. Unfortunately, Conant and Kilbridge's design was somewhat inadequate in that they did not assess employee attitudes directly. Nevertheless, this study represents one of the few attempts to empirically determine the effects of job enlargement on employee attitudes and behavior.

While one might conclude from the above research that there appears to be a direct relationship between employee attitudes and job complexity, such a conclusion is equivocal in that none of the studies have made allowances for the effects of intelligence. It appears quite reasonable to assume that all employees are not equally susceptible to boredom and
monotony (Viteles, 1932, page 537). That is, it is logical to assume that one's attitude towards one's job (i.e., feelings of satisfaction and dissatisfaction, boredom and monotony) are a function of one's intelligence as well as the complexity of the job. Indeed, the assumption underlying Hypotheses IIIa and IIIb is that a person with a low level of intellectual functioning will be as frustrated in a highly complex job as will a person with a high level of intellectual functioning who is placed in a job of low complexity.

Investigations concerning the relationship between intelligence and employee attitudes have been of interest to psychologists for a number of years. However, no one has looked at the relationship between intelligence and job attitudes in terms of Herzberg's theory. Some insight into this area may be gained from a brief review of the literature.

One of the earliest studies to investigate the relationship between intelligence and employee performance in an industrial setting was conducted by Bills (1923). Bills gave a "mental alertness" test to 133 clerks, and examined their turn-over rate over a 30-month period of time. This investigator found a relationship among job complexity, the employees' scores on the alertness test, and job turn-over. Specifically, he found that Ss with high alertness scores quit the simple routine jobs, and Ss with low alertness scores quit the more complex and demanding jobs.

Snow (1927) found that "duller" individuals showed less dissatisfaction with highly repetitive work than "brighter" Ss. However, when the work was fairly complex the "duller" Ss manifested considerable
dissatisfaction.

In a series of investigations concerning the effects of fatigue on employee attitudes and behavior, Wyatt, Fraser and Stock (1929) reached the following conclusion:

The productivity of workers of inferior intelligence is steadier and less affected by midspell depression than that of the more intelligent workers. Moreover, the introspective reports indicate that while workers of low intelligence appeared to like the repetitive process, those of high intelligence seemed to be quite dissatisfied with the work.

Viteles (1932, page 538), conducted a study to determine the role which individual differences play in susceptibility to monotony. He examined the relationship between intelligence and turn-over among female department store clerks and found that Ss with high intelligence had a higher turn-over rate than Ss with low intelligence.

In a study similar to the one conducted by Viteles, Kriedt and Gadel (1953) found a negative relationship between intelligence and the probability that an individual would remain on a routine, clerical job.
CHAPTER II

Method

Sample

A sample of 125 male employees of a midwest fixture manufacturing corporation was randomly selected from a male work force of 331. The final sample (N=100) was smaller than the original sample due to the fact that three Ss filled out one of the questionnaires in an unscorable manner, six Ss were females who had been selected by mistake, and 16 Ss were either absent or on vacation. Although the sample was homogeneous in that it contained only male, "blue collar" workers, several types of workers were included from unskilled production line employees to highly skilled tool and die workers.

The average age of the Ss was 27.48 years, with a range from 18 to 57 years, and a standard deviation of 9.75. Additional descriptive data pertaining to the sample may be found in Appendix G.

Instruments

Data from the 100 Ss were collected with respect to the following variables: job frustration, intellectual functioning, internal-external orientation, non-job activities, and job complexity. A description of the
Employee Attitude Questionnaire. The extent to which an employee is frustrated by his job was assessed by the EAQ developed by Nevotti, Olson, and Stevenson (1969). This instrument, which may be found in Appendix A, measures employee attitudes à la Herzberg's Motivator-Hygiene Theory (Herzberg et al., 1959). This instrument represents a substantially modified version of the Job Motivation Inventory developed by Kahoe (1966).

The EAQ consists of a total of 60 questions, 30 of which pertain to the motivator dimension and 30 pertaining to the hygiene dimension. Furthermore, the 30 motivator items contain five questions related to each of the following six motivator factors: achievement, recognition, advancement, responsibility, opportunity for growth, and an interesting job. Likewise, the 30 hygiene items contain five statements dealing with each of the following six hygiene factors: status, security, company policy, supervision, co-workers, and working conditions.

Four scores were derived from the responses made by the Ss to this instrument: (a) total job frustration; (b) motivator frustration; (c) hygiene frustration; and (d) frustration with each of the 12 individual variables.

The index of total job frustration was derived by summing the scores of the first part of all 60 items, and subtracting from this the summation of the scores derived from the second part. This score represents the degree to which each S was frustrated in his strivings for both motivator and hygiene factors.

The motivator frustration score was obtained in a manner similar to
the method used to derive the total job frustration score; however, only
the 30 items pertaining to motivator factors were analyzed. This provides
an index of the degree to which each $S$ was satisfied with his job.

The hygiene frustration score was also derived in a manner similar
to the method used to derive the total job frustration index; however, only
the 30 items related to hygiene factors were analyzed. This provided an
index of the degree to which each $S$ was dissatisfied with his work.

Finally, an index of each $S$'s frustration with each of the 12 individual
variables was obtained. These 12 indices were also obtained in a manner
similar to the method used to derive the total job frustration score; however,
only the five items pertaining to a variable were analyzed (e.g., the five
statements pertaining to achievement were analyzed, then the five state­
ments pertaining to working conditions were analyzed, etc.). Each of
these 12 scores was then summed across $S$s to provide an analysis of the
weak points (i.e., sources of greatest frustration) within the organization
as perceived by the employees.

It should be emphasized that the present study is only the second
piece of research using the EAQ, and that this instrument is clearly in the
experimental stage. The first use of the EAQ (Nevotti et al., 1969) was
an attempt to validate this instrument using a sample consisting of 20
semi-skilled and unskilled building and grounds employees. This initial
study yielded a validity coefficient of $r_s = +.501$, using total job frus­
tration scores as the predictor and absenteeism as the criterion. This re­
sult was significant at the .05 level of confidence.
In the Nevotti et al. (1969) study a measure of internal consistency was also computed using the "odd-even" technique, and corrected by the Spearman-Brown formula (Guilford, 1965, page 458). The motivator items had a coefficient of internal consistency of + .932, while the consistency coefficient for the hygiene items was + .482.

In an attempt to further validate the EAQ, the results obtained in the present study were correlated with absenteeism, a commonly used index of employee satisfaction and dissatisfaction. Only those Ss who had been on the job for 12 months or more (i.e., N=59) were used to obtain this validity coefficient. The elimination of Ss with tenure of less than 12 months was done because it was reasoned that these employees had not been on the job a sufficient length of time to have been fully effected by all the intrinsic and extrinsic factors of the work situation. The inclusion of Ss with less than 12 months tenure in the initial sample was a methodological error made by E.

A Pearson product-moment correlation was computed between the criterion (absenteeism) and the total job frustration scores. The coefficient of correlation between these two measures was - .224. Due to the fact that this relationship is not statistically significant (p = .05), serious doubt is cast on the use of the EAQ for measuring the degree to which Ss are frustrated by their jobs.

In an attempt to determine if a curvilinear model was more appropriate than the linear model assumed with Pearson r, an eta coefficient and an F-test for non-linearity were computed between these sets of data.
(Guilford, 1965, pp. 308-317). The F-test for non-linearity between absenteeism and the total job frustration scores was significant beyond the .01 level. Hence, a curvilinear model was assumed, and the eta coefficient ($\eta = .479$) provides the best estimate of the relationship between these variables.

A graphic display of the relationship between total job frustration and absenteeism is presented in Figure 3. This relationship was computed by means of a polynomial regression analysis (Dixon, 1968, pp. 289-296).

One possible explanation of the relationship displayed in Figure 3 may be derived from Festinger's theory of cognitive dissonance (Secord and Backman, 1964, pp. 115-118). In terms of this theory it may be reasoned that some of the Ss (i.e., those with an absenteeism rate $\leq$ 4 days) who found their work to be dissonance-provoking (i.e., the motivator and hygiene factors which they had were less than what they desired) attempted to reduce this dissonance by changing their environment (i.e., improving the content and context of their jobs). Although these Ss were frustrated by their jobs, they retained the belief that they could eventually attain those factors which they desired from their work. In short, these Ss believed they could best reduce their dissonance by maintaining an adaptive posture towards their employer, hence their rate of absenteeism remained low.

Concerning those Ss with relatively high rates of absenteeism, it may be argued that instead of attempting to resolve their dissonance in an adaptive manner, they attempted to resolve their dissonance by withdrawing from the work situation; that is, they attempted to resolve their dissonance
Figure 3. Relationship between total job frustration and absenteeism.
by changing their behavior. These individuals have learned that their jobs are dissonance-provoking and hence are to be avoided. However, avoiding one's job is likewise dissonance-provoking in that work is held in high esteem in our culture (as well as being financially rewarding). Therefore, these individuals attempted to resolve this subsequent dissonant situation by modifying their attitude towards their job (i.e., they will give little importance to their work). The end result is an individual who has withdrawn from his job (i.e., has a high rate of absenteeism) and is no longer frustrated by his job because he is no longer ego-involved.

This interpretation of the observed relationship is a tenuous one which should be experimentally verified. Future research in this area might examine these two groups of workers (i.e., those who attempt to work-out their dissonance in an adaptive manner vis-à-vis those who withdraw from their jobs) in an attempt to determine whether or not the two groups differ with respect to individual and social variables.

In an attempt to estimate the reliability of the EAQ an odd-even estimate of internal consistency was computed for the 30 motivator and 30 hygiene items. With the Spearman-Brown correction made (Guilford, 1966, page 458) the coefficient of internal consistency for the motivator items was + .945, and + .849 for the hygiene items.

Wonderlic Personnel Test. An index of the level of intellectual functioning of the Ss was obtained through administration of the Wonderlic Personnel Test, Form D. The average score obtained was 19.740 for the entire sample, with a standard deviation of 6.659, and a range of 4 to 46.
The average score for these Ss is roughly equivalent to an IQ of 101 (Otis, 1954), and closely approximates scores obtained by other Es from industrial populations similar to the one under investigation (Wonderlic, 1966b, page 39). It should be noted that the group of Ss referred to as "below average intelligence" in Hypothesis IIIa was operationally defined as those Ss who scored 19 or less on the Wonderlic Personnel Test (N=34). Those Ss categorized as "above average intelligence" in Hypothesis IIIb were operationally defined as those Ss who scored 20 or better on the Wonderlic (N=25).

Insofar as the validity of this instrument is concerned, Wonderlic (1966a, page 4) states:

This test has been shown to be a valid instrument in determining success on a number of different jobs. The number of questions right clearly distinguishes between good and poor groups of employees differentiated on work records accumulated over a period of five years.

The reliability of the Wonderlic is very good. Test-retest reliability coefficients range from +.82 to +.94, and odd-even estimates of internal consistency range from +.88 to +.94 (Wonderlic, 1966a).

Internal-External Orientation. Determination of an individual's internal-external orientation was accomplished through administration of the Internal-External Control of Reinforcements Scale, developed by Rotter, Liverant and Crowne (1961). To disguise its purpose the I-E Scale has been titled the Social Reaction Inventory. The I-E Scale, which is reproduced in Appendix B, consists of 29 items, six of which are "fillers." The average score on the I-E Scale for this sample was 7.746, with a
standard deviation equal to 3.740, and a range of 0 to 18. It should be emphasized that this instrument is scored in the external direction, i.e., a high score represents an external orientation.

A good deal of research has been generated in connection with the Internal-External Orientation concept, and the results from many of the studies which have employed the I-E Scale are displayed in Appendix C. Generally, coefficients of internal consistency have ranged from +.65 to +.83. Numerous validity studies have been conducted and these results are presented in conjunction with Hypothesis II.

**Activities Questionnaire.** The degree to which an employee participates in non-job activities was determined by his responses to the Activities Questionnaire, an instrument constructed by E specifically for this research project. This instrument, which is enclosed in Appendix D, contains 27 items pertaining to the following six areas of non-job activity: home and community, union, formal social organizations, church, athletic events, and individual sports and hobbies. The items pertaining to union activity were derived from a union activity questionnaire developed by Tannenbaum and Kahn (1958, pp. 247-261).

No direct estimate of validity was computed for the Activities Questionnaire for two reasons. First, the type of information sought was of a factual, demographic nature and is not as subject to distortion as are other types of information (e.g., attitudinal). Second, it was highly impractical if not impossible to verify information obtained from this instrument. It should be emphasized, however, that in the present research a significant
relationship \( p < .01 \) was found between the I-E Scale and the Activities Questionnaire; that is, the more internally oriented a S was, the greater his propensity for non-job activity. This finding is significant in that previous research (Gore and Rotter, 1963; Seeman, 1964; Strickland, 1965) indicates social action-taking behavior and an internal orientation are also positively and significantly related. Therefore, it is logical to assume that the Activities Questionnaire is in fact measuring non-job activity, thus indirectly substantiating the validity of this instrument.

A coefficient of reliability for this instrument would be desirable; however, a test-retest coefficient was unobtainable due to practical limitations (i.e., expense to sponsoring organization), and a coefficient of internal consistency was not computed as the questionnaire contains six categories with only three to six items in each.

Job Complexity Index. The complexity of each Ss job was assessed by E through the use of the Job Complexity Index. This instrument, which appears in Appendix E, was devised by E and consists of three parts: skill level, variety, and autonomy. These three criteria of job complexity were employed by Hulin and Blood (1968) in their review of the literature on job enlargement.

The job complexity ratings were made in cooperation with the personnel director of the sponsoring organization, and were computed in the following manner: (a) the personnel director reviewed all occupational categories within the organization and indicated how each job should be rated on each of the scales of the Job Complexity Index; (b) E looked up
each S's occupational category in the S's personnel file and computed the S's complexity rating on the basis of the personnel director's decisions.

Several points concerning this rating scheme should be emphasized. First, the personnel director's decision concerning how a given occupational category should be rated was not arbitrary; but rather, was based on the job description contained in the formal union-management contract. Second, the reliability of this procedure, though not computed, can be assumed to be good, since the transmission of the information from the job descriptions to the complexity ratings was quite straightforward. Finally, while one might reasonably question the validity of this procedure, it was the best of the three methods available. The other possible procedures included ratings by each of the foremen and direct observation by E. However, foreman ratings are of questionable utility due to individual and departmental differences (Tiffin and McCormick, 1965, page 244), and direct observation has the drawback of producing the "Hawthorne Effect." Moreover, these last two methods have serious practical limitations in that they require large expenditures of time and money.

Procedure

The procedure followed in the collection of the data was straightforward. The initial step consisted of mailing a letter of explanation to each S who had been selected to participate in the research. A copy of this letter is presented in Appendix F.

Two days after the letters were mailed, the data collection began
and continued over a four-day period. The Ss met with E under standard group testing conditions, and the administration of the four questionnaires took approximately one hour of company time for each group. It was necessary to extend the data collection over a period of several days in order to avoid any serious disruptions within any one department or within the plant as a whole.

At the beginning of each testing session each S was given a packet which contained one answer sheet for each of the four questionnaires (i.e., EAQ, SRI, Wonderlic, and Activities Questionnaire). Attached to each packet was a small label with the Ss name on it. The following introduction and instructions were then given to the group:

Hello, my name is Joe Nevotti. I'm a graduate student at UNO, and I'm working on a research project which concerns the attitudes which workers develop while on the job, as well as worker attitudes toward leisure activities.

Each of you has been given a packet which contains four answer sheets. Please tear the name tag off your packet. This guarantees you that the responses which you make will be absolutely confidential and that no one will know how you responded.

Now open your packet, remove the four answer sheets and examine them. We will begin with the Employee Attitude Questionnaire, so please select the answer sheet which has the words Employee Attitude Questionnaire at the top.

Following these instructions the EAQ was handed out, the Ss were directed to read the instructions for this questionnaire, and to ask any questions which they might have had. If no questions were asked the Ss were directed to proceed. This procedure was followed for all four questionnaires, the only exception being the administration of the Wonderlic
Personnel Test for which the Ss were timed (12 minutes).

Each S was led to believe that no one, including E, would know how S responded. In reality, each packet had been marked with a hidden identification number in order that each S's responses could be identified. This identification was accomplished by carefully opening one corner of the flap at the bottom of the envelope (Peerless Clasp Envelope, No. 90, 9" x 12"), placing the identification number on the inside of the flap, and re-sealing it. This method proved highly successful in that none of the Ss were aware of the deception. It should be emphasized that although deception was considered essential for obtaining candid, unbiased responses, confidentiality of the data has been maintained.

One unforeseen procedural difficulty was encountered: while the majority of the Ss were tested at the beginning of their shift when they were physically and psychologically "fresh," some Ss were tested at the end of their work day. Unfortunately, E did not become aware of this problem until it was too late to do anything to compensate for it, hence conclusions concerning the effects which this error produced are tenuous. Future research with industrial populations should control for this by assuring that all Ss are either just beginning or just ending their work day.
CHAPTER III

Results

All the hypothesized relationships were analyzed with the Pearson product-moment coefficient of correlation. In an attempt to make more meaningful interpretations of the data, two sets of results were analyzed. One set consisted of those Ss who had been on their jobs for 12 months or more (N=59), and the other set consisted of the entire sample (N=100). The break-down of the data into these two sets was done because it was reasoned that Ss who had been on the job for less than one year may not have been fully affected by all the intrinsic and extrinsic factors of the work situation. The inclusion of Ss with less than 12 months was a methodological error made by E.

An outline of the analyses made and their concomitant assumptions are as follows:

(1) Pearson product-moment intercorrelations were computed among all variables for both data sets.

(2) The frequency distributions of those variables involved in the three hypotheses were inspected to determine if the assumptions of normality and homoscedasticity were met.

(3) Eta coefficients and F-tests for non-linearity were computed to determine if the assumption of linearity was met.
The results of the intercorrelations, together with their means and standard deviations, are presented in Appendix G.

**Hypothesis I**

There is a direct relationship between the degree to which a worker is frustrated with his job and the extent to which he participates in non-job activities.

The data concerning the relationship between job frustration and non-job activity do not support the direct relationship predicted in Hypothesis I. The product-moment correlations between these two variables and their sub-categories are presented in Table I.

These results clearly indicate that there is no statistically significant relationship between job frustration and non-job activity for this population.

**Hypothesis II**

There is a direct relationship between the extent to which an employee participates in non-job activities and the degree to which he believes he can influence and control events.

The data collected in conjunction with Hypothesis II suggest that the direct relationship predicted between internal orientation and non-job activities is supported beyond the .01 level of confidence. These results are presented in Table II. It should be emphasized that the I-E Scale is scored in the external direction, hence the negative relationships.


<table>
<thead>
<tr>
<th>Variable</th>
<th>Total Job Frustration</th>
<th>Motivator Frustration</th>
<th>Hygiene Frustration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=59</td>
<td>N=100</td>
<td>N=59</td>
</tr>
<tr>
<td>Total Non-Job Activity</td>
<td>-.161</td>
<td>.031</td>
<td>-.038</td>
</tr>
<tr>
<td>Home and Community</td>
<td>-.018</td>
<td>.158</td>
<td>-.026</td>
</tr>
<tr>
<td>Union</td>
<td>-.023</td>
<td>.106</td>
<td>.112</td>
</tr>
<tr>
<td>Formal Social Organizations</td>
<td>-.153</td>
<td>-.027</td>
<td>-.069</td>
</tr>
<tr>
<td>Church</td>
<td>-.252*</td>
<td>.001</td>
<td>-.129</td>
</tr>
<tr>
<td>Athletic</td>
<td>-.102</td>
<td>.018</td>
<td>-.043</td>
</tr>
<tr>
<td>Individual</td>
<td>-.080</td>
<td>-.015</td>
<td>-.082</td>
</tr>
</tbody>
</table>

* Significant at the .05 level.
TABLE II
CORRELATIONS BETWEEN INTERNAL ORIENTATION AND NON-JOB ACTIVITIES

<table>
<thead>
<tr>
<th>Variable</th>
<th>I-E Scores</th>
<th>N=59</th>
<th>N=100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Non-Job Activity</td>
<td>-.519**</td>
<td>-.300**</td>
<td></td>
</tr>
<tr>
<td>Home and Community</td>
<td>-.314*</td>
<td>-.191</td>
<td></td>
</tr>
<tr>
<td>Union</td>
<td>-.271*</td>
<td>-.107</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>-.324*</td>
<td>-.162</td>
<td></td>
</tr>
<tr>
<td>Church</td>
<td>-.214</td>
<td>-.200*</td>
<td></td>
</tr>
<tr>
<td>Athletic</td>
<td>-.554**</td>
<td>-.298**</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>-.231*</td>
<td>-.118</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at .05 level
** Significant at .01 level

Hypotheses IIIa and IIIb

For employees with below average intelligence there is a direct relationship between job complexity and job frustration.

For employees with above average intelligence there is an inverse relationship between job complexity and job frustration.

The results of the data concerning the third hypotheses are presented in Table III. Additional data pertaining to these hypotheses are presented in Appendix H. These results, while in the predicted direction, are not statistically significant; hence Hypotheses IIIa and IIIb are not
confirmed.

TABLE III

CORRELATIONS BETWEEN JOB COMPLEXITY AND JOB FRUSTRATION
FOR Ss WITH ABOVE AVERAGE INTELLIGENCE (N=25) AND
Ss WITH BELOW AVERAGE INTELLIGENCE (N=34)

<table>
<thead>
<tr>
<th></th>
<th>Total Job Frustration</th>
<th>Motivator Frustration</th>
<th>Hygiene Frustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Job Complexity</td>
<td>-.189 .108</td>
<td>-.245 .066</td>
<td>-.075 .149</td>
</tr>
<tr>
<td>Skill</td>
<td>-.246 .024</td>
<td>-.288 -.045</td>
<td>-.139 .114</td>
</tr>
<tr>
<td>Variety</td>
<td>-.214 .094</td>
<td>-.260 .063</td>
<td>-.108 .122</td>
</tr>
<tr>
<td>Autonomy</td>
<td>-.344 .132</td>
<td>-.475* .095</td>
<td>-.099 .162</td>
</tr>
</tbody>
</table>

*Significant at .05 level.

A factorial breakdown of the results obtained from the EAQ for all Ss who had been on their jobs for 12 months or more (N=59) is presented in Table IV. For comparative purposes, the results obtained in the original EAQ study (Nevotti et al., 1969) are also presented in this table (N=20).

These 12 factors represent the 12 sub-categories of the EAQ, and are variables which Herzberg et al. (1959) deduced (via content analysis) as responsible for promoting feelings of job satisfaction and job dissatisfaction. This analysis was performed in an attempt to determine
the degree to which each of these factors was a source of frustration for the employees of the sponsoring organization. It should be emphasized that the higher the average value of a given factor the more that factor was considered to be a source of frustration.

**TABLE IV**

<table>
<thead>
<tr>
<th>Factor</th>
<th>N=59</th>
<th></th>
<th>N=20</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>S.D.</td>
<td>Rank</td>
<td>X</td>
</tr>
<tr>
<td>Recognition</td>
<td>9.12</td>
<td>5.36</td>
<td>3</td>
<td>6.80</td>
</tr>
<tr>
<td>Interesting Job</td>
<td>6.48</td>
<td>4.62</td>
<td>8</td>
<td>4.60</td>
</tr>
<tr>
<td>Opportunity for Growth</td>
<td>8.78</td>
<td>5.65</td>
<td>4</td>
<td>7.00</td>
</tr>
<tr>
<td>Responsibility</td>
<td>7.03</td>
<td>5.26</td>
<td>7</td>
<td>5.95</td>
</tr>
<tr>
<td>Challenge</td>
<td>7.85</td>
<td>4.52</td>
<td>5</td>
<td>6.20</td>
</tr>
<tr>
<td>Achievement</td>
<td>9.90</td>
<td>5.15</td>
<td>2</td>
<td>9.00</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>10.14</td>
<td>4.52</td>
<td>1</td>
<td>5.00</td>
</tr>
<tr>
<td>Co-workers</td>
<td>5.86</td>
<td>4.76</td>
<td>10</td>
<td>3.85</td>
</tr>
<tr>
<td>Supervision</td>
<td>6.12</td>
<td>4.92</td>
<td>9</td>
<td>6.35</td>
</tr>
<tr>
<td>Status</td>
<td>4.88</td>
<td>4.28</td>
<td>11</td>
<td>1.95</td>
</tr>
<tr>
<td>Company Policy</td>
<td>7.36</td>
<td>4.53</td>
<td>6</td>
<td>3.90</td>
</tr>
<tr>
<td>Security</td>
<td>4.61</td>
<td>3.70</td>
<td>12</td>
<td>2.95</td>
</tr>
</tbody>
</table>

The rank of a given factor represents, at an ordinal level, the degree to which that factor is a source of frustration relative to the other factors. It is interesting to note that, in both the present study and the
earlier study using the EAQ (Nevotti et al., 1969), six of the eight most frustrating factors are motivator factors. This corroborates research conducted by Herzberg (1969) which strongly suggests that the typical industrial organization is far more concerned with the context of an employee's job than with the content of a job. Furthermore, this represents empirical support for the construct validity of the EAQ.
CHAPTER IV

Interpretation of Results

Discussion

The first hypothesis predicted that workers whose jobs frustrated their motivator and hygiene needs would react by participating in non-job activities in order to obtain these factors. However, no support was obtained for this hypothesis. Participation in non-job activities does not appear to be significantly related to either motivator frustration, hygiene frustration, or total job frustration. Not only were the investigator's expectations not confirmed; but also, previous research (Strauss and Sayles, 1952; Dean, 1954; Form and Dansreau, 1957; and Tannenbaum and Kahn, 1958) was not corroborated.

There are three salient explanations for the rejection of Hypothesis I, one of which concerns the manner in which job frustration was measured, another pertains to the form or qualitative nature of the Ss' reaction to frustration, and the third concerns the basic nature of the hypothesized relationship.

Insofar as the method of measuring job frustration is concerned, the results of the present study suggest that the instrument used for this purpose (i.e., the EAQ) had no predictive validity. While a significant (p < .01)
curvilinear relationship was found between total job frustration and absenteeism, knowledge of a S's score on the EAQ would not enable one to make accurate predictions about that S's absenteeism rate (i.e., "morale"). Without predictive validity it is not safe to assume that the EAQ does in fact measure what it purports to measure (i.e., frustration with one's job); hence, non-confirmation may be the result of a faulty instrument.

The results of the present study stand in direct contrast to the results from a previous study (Nevotti et al., 1969) wherein the EAQ was found to be a valid predictor of absenteeism ($r_s = +.501, p < .05$). However, due to the fact that the present study used a larger sample and obtained much better reliability coefficients for both sections of this instrument, it appears reasonable to assume that the results obtained in the present study are more indicative of the quality of the EAQ.

While no support was obtained for the predictive validity of the EAQ, several results indicate this instrument is not totally lacking in utility. First, the EAQ has good construct and content validity. The 12 factors represented in this instrument were deduced by Herzberg et al. (1959) as responsible for promoting feelings of job satisfaction and job dissatisfaction. Furthermore, these 12 variables are equally represented (i.e., each factor is repeated five times, and there are 30 items dealing with motivator factors and 30 items pertaining to hygiene factors). Second, the factorial breakdown of the EAQ (see Table IV) indicates that six of the eight most frustrating factors are motivator factors. This supports evidence collected by Herzberg (1966, 1968, 1969) which suggests that the typical
The industrial organization is far more concerned with the context of a job than with job content. Finally, the high reliability coefficients obtained in the present study (i.e., + .945 for the motivator factors, and + .849 for the hygiene factors) suggests the EAQ is measuring something in a reliable manner, even though that "something" is not absenteeism. Hence, it appears possible that the lack of predictive validity indicated by the present research may be an artifact of either the criterion, the population, or both.

In summary, one possible reason why the first hypothesis was rejected is that the EAQ is not a valid instrument. However, due to the contradictory nature of the results obtained from the EAQ, it appears possible that the lack of validity of this instrument may be an artifact of the criterion, the population, or both. Certainly, additional research using other criteria (e.g., productivity, quality, supervisory ratings) is needed.

A second cogent explanation for the rejection of Hypothesis I has to do with the qualitative nature of the Ss' responses to frustration. The first hypothesis may have been rejected because the activities in which the Ss engaged to relieve their frustration were not measured by the Activities Questionnaire. It should be noted that this instrument measured six possible types of non-job activity. However, several important areas of activity such as participation in informal work groups, socializing at bars, on-job retirement, fantasy, withdrawal, and passively watching television during leisure time were not measured. No attempt was made to measure these areas because it was believed that they could not be accurately
measured with a paper-and-pencil type questionnaire. Furthermore, it is questionable if any of these variables could be measured in any manner, with the possible exception of E infiltrating the organization and gaining the acceptance of the Ss -- a method which was totally impractical.

In summary, a second possible explanation for the rejection of Hypothesis I is that those non-job activities in which the Ss engaged were not measured.

A third possible explanation for the rejection of Hypothesis I is that, while both instruments may have been relatively valid and reliable, the hypothesis is simply not true. From a logical standpoint however, this is a weak argument. It has been empirically verified that jobs similar to the majority of those encountered in the present research (i.e., production line) are boring for the majority of workers (Argyris, 1957). Perceiving such a boring, monotonous job as thwarting either his motivator and/or hygiene needs, the employee would, in all but the most sociopathic cases, attempt to do something about this frustration either directly (e.g., changing the content of his work) or indirectly (e.g., participating in non-job activities). Therefore, this third explanation appears untenable.

The direct relationship hypothesized between internal orientation and participation in non-job activities was strongly supported (p < .01). This finding is significant in several respects. First, it corroborates research conducted by other investigators (Gore and Rotter, 1963; Seeman, 1964; Strickland, 1965) wherein it was found that individuals who believe they have influence or control over events (internally oriented) are more
likely to take social action (i.e., initiate overt acts) than are individuals who believe that what happens to them is a function of luck, fate, or the manipulation of others (externally oriented). Second, insofar as the future utility of both the Internal-External Orientation Theory and scale are concerned, the present study suggests that this concept is generalizable to industrial populations. Finally, to the degree that leadership is a function of the initiation of overt acts (Sherif and Sherif, 1969, page 170; Halpin and Winer, 1957; Blake and Mouton, 1964) the I-E Scale may prove useful in predicting leadership ability. This is, of course, an hypothesis which should be experimentally verified.

One rather interesting relationship emerged from the intercorrelations computed among the variables; namely, the significant correlation ($r = +.294, p < .05$) between the I-E Scale and the EAQ. This relationship suggests that the greater an individual's external orientation, the more he will indicate frustration with his job. This finding may be explained in terms of the Internal-External Orientation Theory; that is, when an externally oriented person encounters a frustrating work situation, he will blame his frustration on external factors (i.e., his job) whereas the internally oriented person will tend to blame his frustration on internal factors. In short, the externally oriented person would probably have a greater tendency to express his frustration with his job by stating, "This job is frustrating, and is not suited for me." The internally oriented person, however, would probably say "This job is frustrating, I am not suited for it." It should be emphasized, however, that this explanation is hypothetical and should be
experimentally verified.

The third hypothesis attempted to ascertain the inter-relationship among intelligence, job complexity, and employee satisfaction-dissatisfaction. Much research has focused on this area, but few studies have looked at the joint effects of these three variables, and no one has examined these interactions in the light of Herzberg's theory.

This investigator predicted that Ss with below average intelligence would become more frustrated as their work increased in complexity as these Ss would not be able to cope with the increased ambiguity, pressure and performance required by more complex jobs. Conversely, it was predicted that Ss with above average intelligence would be less frustrated as their work increased in complexity, because they would perceive the increased pressure concomitant with a more complex job as being challenging. However, the results of both Hypotheses IIIa and IIIb, although in the predicted direction, were statistically insignificant.

There appear to be two possible explanations for the rejection of these hypotheses, one of which concerns the manner in which job frustration was measured, and the other pertains to basic differences which existed between the two groups.

A thorough discussion has been presented with respect to the weaknesses inherent in the instrument used to assess job frustration (i.e., EAQ). It appears to be quite possible that Hypotheses IIIa and IIIb were rejected because the EAQ was invalid. However, this is a tenuous argument which should not be accepted or rejected until further research on the
validity of the EAQ has been conducted.

One very plausible explanation for the rejection of Hypothesis IIIa is that the jobs at which the below average Ss worked were not complex enough to produce feelings of inadequacy and frustration. Indeed, the average complexity score for the below average group (see Appendix H) was 15.35 (S.D. = 3.32) compared with an average complexity score of 15.00 (S.D. = 3.16) for the above average group. (Note: job complexity scores could range from 5 to 25.) The fact that the average complexity scores for the two groups were approximately equivalent to the median of possible complexity scores suggests that none of the jobs were very complex or challenging; hence, the below average intelligence group may not have perceived their work as ambiguous or pressuring, and would not feel frustrated.

The assumption that none of the jobs were very complex or challenging is supported by a comparison of the length of tenure for the two groups. The Ss in the below average group had been on their jobs, on the average, for 14.4 months longer than the above average group. This indicates that the brighter Ss had a higher turn-over rate than did the duller Ss. This, in turn, suggests that rather than put up with a job of limited challenge and complexity, employees who are above average in intelligence are more likely to quit such jobs than are employees with below average intelligence. Hence it appears possible that Hypothesis IIIb was rejected due to the fact that the restriction of the range of tenure for the above average intelligence Ss produced an attenuation of the
frustration scores for this group.

An examination of the factorial breakdown of the results of the EAQ (see Table IV), with particular emphasis on the rank-order of the discrepancy scores, yields support for both Herzberg's theory and the validity of the EAQ. One will note that in both the present research (N=59) and in previous research (N=20) the motivator or job content factors account for six of the first eight ranks; that is, the motivator factors have higher average discrepancy scores than do the hygiene factors. This indicates that the contextual factors of the job are relatively well taken care of as far as the Ss in these two studies are concerned, but that the job content factors leave something to be desired. In other words, these results indicate that these Ss are not dissatisfied with their work, but neither are they satisfied. These results support research conducted by Herzberg (1968, 1969) indicating that industrial organizations are typically more concerned with job context than with job content. Insofar as the implications for this finding are concerned, Herzberg et al. (1969) have empirically demonstrated that organizational efficiency can be significantly improved when the content of a given job is qualitatively improved.

Summary and Conclusions

The purpose of this thesis, in addition to the purposes stated in Chapter I, has been to examine worker attitudes and behavior in an exploratory, eclectic manner. It was the intention of the investigator to provide additional insight into the roles which certain personality, environmental,
and intellectual factors play in shaping employee attitudes and behavior. While correlational research is typically "weak" from the experimental design point of view, it is possible to draw several conclusions from these data.

First, while no support was found for the direct relationship hypothesized between non-job activities and job frustration, it is not safe to reject this hypothesis. One variable which may have intervened to cause the rejection of Hypothesis I is the invalidity of the instruments used to measure non-job activity and job frustration (i.e., Activities Questionnaire and EAQ). It is also possible that Herzberg's theory of job satisfaction and job dissatisfaction is erroneous; however, the plethora of literature which exists in this area (see Herzberg, 1966; Winslow and Whisett, 1967) supports the Motivator-Hygiene Theory. Before any firm conclusions can be made with respect to Hypothesis I, more definitive research on the validity of the EAQ is needed.

Second, the results obtained in conjunction with the direct relationship hypothesized between internal orientation and non-job activity were highly significant, and suggest that this theory is applicable to industrial populations. Furthermore, as several investigators (Halpin and Winer, 1957; Blake and Mouton, 1964; Sherif and Sherif, 1969) have found that initiation of overt behavior is a very important aspect of effective leadership, the I-E Scale may prove to be a useful management tool for the prediction of leadership potential. Additional research in this area is needed.

Third, the results obtained in conjunction with Hypotheses IIIa and
Illb, while in the predicted directions, were statistically insignificant. However, as was the case with Hypothesis I, it is not safe to reject these hypotheses without conducting additional research on the validity of the EAQ. Furthermore, the data strongly suggests that the rejection of Hypotheses IIIa and IIIb was due to the fact that the jobs were not complex and a restriction of the range of tenure. Additional research should be conducted in an industrial organization which has jobs which run the gamut of complexity (as measured by the Job Complexity Index). Also, such research should be conducted over a period of time to determine if restriction of range was in fact occurring.

Suggestions for Future Research

The results of this investigation, although ambiguous, are interesting and suggest several research possibilities. The most pressing need is to conduct more work on the EAQ. While the results of this investigation suggest that the predictive validity of this instrument is practically zero, the results of the factorial breakdown (Table IV) as well as the high reliability coefficients obtained, suggest that this may be a function of the criterion (i.e., absenteeism) and/or the population used in this study. Further research should be conducted using other indices of job frustration such as productivity, quality, waste, turn-over, supervisory ratings, etc. Unfortunately, these measures were unobtainable for this population, and are seldom kept by industrial organizations.

Another possibility which presents itself in relation to the measurement
of job attitudes (à la Herzberg's Motivator-Hygiene Theory) is to use some unobtrusive technique other than a direct paper-and-pencil questionnaire. Indeed, assessing attitudes in the manner used by this investigator (i.e., EAQ) is naive on at least two counts. First of all, such measures are highly susceptible to lying, faking, the "Hawthorne Effect," and other distortions. Second, it is not realistic to assume that one can adequately measure an individual's attitudes by using just one instrument; that is, competent psychometric procedures require that several instruments be used to measure a given attitude. Future research, to alleviate these shortcomings, could use some unobtrusive measure such as Sherif and Sherif's (1969) "Own Categories" technique.

A second area which is in need of further research concerns the ability of the I-E Scale to measure leadership potential. The results from this and other studies indicate this instrument can predict which workers have a propensity for initiating social action. As several investigators have determined that this variable is an integral part of leadership, it follows that the I-E Scale may have some utility in this area.

A third possibility for additional research concerns the inter-relationship among intellectual functioning, job complexity, and job frustration (as defined in this research). The data collected with respect to Hypotheses IIIa and IIIb suggest that these hypotheses were rejected due to the operation of two uncontrolled variables (job complexity for Hypothesis IIIa, and restriction of range in the case of Hypothesis IIIb). Because the results were in the predicted direction, plus the apparent
effect of these two extraneous variables, it appears justifiable to re-test the hypotheses in an industrial organization where the jobs are heterogeneous with respect to complexity (as measured by the Job Complexity Index) and where such a study can be carried out over at least one to three years (to control for restriction of range).
References


Baladamus, W. Type of work and motivation. British Journal of Sociology, 1951, 2, 44.


APPENDIX A

EMPLOYEE ATTITUDE QUESTIONNAIRE
EMPLOYEE ATTITUDE QUESTIONNAIRE

Different things about a job are important to different people. On the following pages there are a number of statements which describe things which might be found on any job. We want to know what is important to you when you think about your job.

Below is a sample question which is very similar to the questions on the following pages:

SAMPLE QUESTION

0. An opportunity to make a lot of money.

(a) How important is this to you?
   (low) 1  2  3  4  5 (high)

(b) How much of this is there on your present job?
   (low) 1  2  3  4  5 (high)

SAMPLE ANSWER

0. (a)  1  2  3  4  5
      (b)  1  2  3  4  5

You will note that each question has two parts, (a) and (b). Read each question carefully, then in part (a) indicate how important that item is to you. Next, in part (b) indicate how much of that item your present job provides you with.

For example, if having the opportunity to make a lot of money is very important to you, fill in the number five space for part (a). Furthermore, if you felt that your present job gave you very little or a low opportunity to make a lot of money you would fill in the number one space in part (b). Please note that you are to make all of your responses on the separate answer sheet which has been provided. MAKE NO MARKS IN THIS BOOKLET!
Answer as carefully and as correctly as you can. Don't think about a question too long; but rather, put down the first thing which comes to your mind. Remember, there are no right or wrong answers.
1. **Being in a position where I could obtain acknowledgement for the good work I do.**
   
   (a) How important is this to you?
   
   (low) 1 2 3 4 5 (high)

   (b) How much of this is there on your present job?

   (low) 1 2 3 4 5 (high)

2. **Comfortable working conditions.**
   
   (a) How important is this to you?

   (low) 1 2 3 4 5 (high)

   (b) How much of this is there on your present job?

   (low) 1 2 3 4 5 (high)

3. **An opportunity to do things which I can be proud of.**
   
   (a) How important is this to you?

   (low) 1 2 3 4 5 (high)

   (b) How much of this is there on your present job?

   (low) 1 2 3 4 5 (high)

4. **A chance to work with nice people.**
   
   (a) How important is this to you?

   (low) 1 2 3 4 5 (high)

   (b) How much of this is there on your present job?

   (low) 1 2 3 4 5 (high)
5. A chance to acquire further knowledge and skills.
   (a) How important is this to you?
       \(\text{(low)}\) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       \(\text{(low)}\) 1 2 3 4 5 (high)

6. An opportunity to have a good boss.
   (a) How important is this to you?
       \(\text{(low)}\) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       \(\text{(low)}\) 1 2 3 4 5 (high)

7. A chance to take responsibility.
   (a) How important is this to you?
       \(\text{(low)}\) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       \(\text{(low)}\) 1 2 3 4 5 (high)

8. A chance to work for a company which is well thought of in the community.
   (a) How important is this to you?
       \(\text{(low)}\) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       \(\text{(low)}\) 1 2 3 4 5 (high)
9. Having a job which offers a challenge.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

10. Working for a company with a good hospitalization plan.
    (a) How important is this to you?
        (low) 1 2 3 4 5 (high)
    (b) How much of this is there on your present job?
        (low) 1 2 3 4 5 (high)

11. An opportunity to advance to a higher position.
    (a) How important is this to you?
        (low) 1 2 3 4 5 (high)
    (b) How much of this is there on your present job?
        (low) 1 2 3 4 5 (high)

12. Being able to have steady employment.
    (a) How important is this to you?
        (low) 1 2 3 4 5 (high)
    (b) How much of this is there on your present job?
        (low) 1 2 3 4 5 (high)
13. Being in a situation where my ideas would be appreciated.

   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)

   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)

14. A chance to have physical safety.

   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)

   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)

15. An opportunity to take on a difficult job and do it well.

   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)

   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)

16. Belonging to a friendly group of workers.

   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)

   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)
17. Having plenty of chances to develop my professional abilities.

   (a) How important is this to you?

       (low) 1 2 3 4 5 (high)

   (b) How much of this is there on your present job?

       (low) 1 2 3 4 5 (high)

18. A chance to work under the supervision of a good manager.

   (a) How important is this to you?

       (low) 1 2 3 4 5 (high)

   (b) How much of this is there on your present job?

       (low) 1 2 3 4 5 (high)

19. Freedom to make decisions on my own.

   (a) How important is this to you?

       (low) 1 2 3 4 5 (high)

   (b) How much of this is there on your present job?

       (low) 1 2 3 4 5 (high)

20. Working for an organization that people think well of.

   (a) How important is this to you?

       (low) 1 2 3 4 5 (high)

   (b) How much of this is there on your present job?

       (low) 1 2 3 4 5 (high)
21. A chance to be creative.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

22. Opportunity for good fringe benefits.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

23. Opportunity to advance in position.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

24. Being with one company or organization long enough that I cannot be laid off.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)
25. Being able to receive recognition for a job well done.
   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)
   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)

26. A chance to have healthful surroundings.
   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)
   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)

27. A chance to apply myself to something worthwhile.
   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)
   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)

28. A chance to work with people who will like me.
   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)
   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)
29. Having the opportunity to learn new skills or gain knowledge.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

30. A chance to work for a boss who is fair.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

31. An opportunity to acquire additional responsibility.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

32. Working for a respected company.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)
33. Doing the kind of work I feel is really important.
   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)
   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)

34. A chance to work at a job which has good hours.
   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)
   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)

35. Having a chance to be promoted to a new position.
   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)
   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)

36. Having good job security.
   (a) How important is this to you?
       (low) 1  2  3  4  5 (high)
   (b) How much of this is there on your present job?
       (low) 1  2  3  4  5 (high)
37. Being recognized for the good work I do.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

38. Freedom from chances of pain or injury.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

39. Being able to see the results of my own efforts.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

40. Being a member of a work group which sticks together in their work.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)
41. A chance to learn something new.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

42. To get along well with my boss.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

43. To be placed in charge of a job and see that it is done right.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

44. Working for an influential company.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)
45. Being able to complete a whole job rather than just a part of one.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

46. Working for an organization that is fair to its workers.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

47. Working in a field in which there is a chance to get ahead.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

48. Having a job where there is little chance of being laid off.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)
49. An opportunity to receive sincere praise.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

50. Having plenty of time to get a job done.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

51. Being able to see the results of my work so that I know that I have accomplished something.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

52. A chance to be part of a team.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)
53. A chance to add to my body of knowledge.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

54. An opportunity to receive good supervision.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

55. Being responsible for my own work.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

56. Having a job which demands respect.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)
57. An opportunity to work at a job which is creative in nature.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

58. A chance to work for a company which provides me with health and life insurance.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

59. A chance to be promoted within the company.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)

60. Working for a company where there is little chance of being fired.
   (a) How important is this to you?
       (low) 1 2 3 4 5 (high)
   (b) How much of this is there on your present job?
       (low) 1 2 3 4 5 (high)
APPENDIX B

SOCIAL REACTION INVENTORY
SOCIAL REACTION INVENTORY

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief: obviously there are no right or wrong answers.

Your answers to the items on this inventory are to be recorded on a separate answer sheet which is loosely inserted in the booklet. Remove THIS ANSWER SHEET NOW. Print your name and any other information requested by the examiner on the answer sheet, then finish reading these directions. Do not open the booklet until you are told to do so.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. Find the number of the item on the answer sheet and black-in the space under the number 1 or 2 which you choose as the statement most true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to
each item independently when making your choice; do not be influenced by your previous choices.

REMEMBER

Select that alternative which you personally believe to be more true.
I more strongly believe that:

1. a. Children get into trouble because their parents punish them too much.
   b. The trouble with most children nowadays is that their parents are too easy with them.

2. a. Many of the unhappy things in people's lives are partly due to bad luck.
   b. People's misfortunes result from the mistakes they make.

3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
   b. There will always be wars, no matter how hard people try to prevent them.

4. a. In the long run people get the respect they deserve in this world.
   b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5. a. The idea that teachers are unfair to students is nonsense.
   b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. a. Without the right breaks one cannot be an effective leader.
   b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. a. No matter how hard you try some people just don't like you.
   b. People who can't get others to like them, don't understand how to get along with others.

8. a. Heredity plays the major role in determining one's personality.
   b. It is one's experiences in life which determine what they're like.

9. a. I have often found that what is going to happen will happen.
   b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
I more strongly believe that:

10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.

       b. Many times exam questions tend to be so unrelated to course work, that studying is really useless.

11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.

       b. Getting a good job depends mainly on being in the right place at the right time.

12. a. The average citizen can have an influence in government decisions.

       b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. a. When I make plans, I am almost certain that I can make them work.

       b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14. a. There are certain people who are just no good.

       b. There is some good in everybody.

15. a. In my case getting what I want has little or nothing to do with luck.

       b. Many times we might just as well decide what to do by flipping a coin.

16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.

       b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.

       b. By taking an active part in political and social affairs the people can control world events.
I more strongly believe that:

18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
   b. There is really no such thing as "luck."

19. a. One should always be willing to admit his mistakes.
   b. It is usually best to cover up one's mistakes.

20. a. It is hard to know whether or not a person really likes you.
   b. How many friends you have depends upon how nice a person you are.

21. a. In the long run the bad things that happen to us are balanced by the good ones.
   b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. a. With enough effort we can wipe out political corruption.
   b. It is difficult for people to have much control over the things politicians do in office.

23. a. Sometimes I can't understand how teachers arrive at the grades they give.
   b. There is a direct connection between how hard I study and the grades I get.

24. a. A good leader expects people to decide for themselves what they should do.
   b. A good leader makes it clear to everybody what their jobs are.

25. a. Many times I feel that I have little influence over the things that happen to me.
   b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. a. People are lonely because they don't try to be friendly.
   b. There's not much use in trying too hard to please people, if they like you, they like you.
I more strongly believe that:

27. a. There is too much emphasis on athletics in high school.
    b. Team sports are an excellent way to build character.

28. a. What happens to me is my own doing.
    b. Sometimes I feel that I don't have enough control over the directions my life is taking.

29. a. Most of the time I can't understand why politicians behave the way they do.
    b. In the long run the people are responsible for bad government on a national as well as on a local level.
APPENDIX C

RESULTS OBTAINED WITH INTERNAL-EXTERNAL
CONTROL OF REINFORCEMENTS SCALE
# RESULTS OBTAINED WITH INTERNAL-EXTERNAL CONTROL OF REINFORCEMENTS SCALE

## INTERNAL CONSISTENCY

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<td>Kuder-Richardson</td>
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<td>Ohio State University, Elementary Psych. Students</td>
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## CORRELATION WITH INTELLECTUAL MEASURES

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<td>Ohio State University</td>
<td>Ohio State Psych Exam</td>
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<td>Ohio Federal Prisoners, Ages 18-26</td>
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## Means and Standard Deviations of I-E Scores for Samples of Several Populations

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APPENDIX D

ACTIVITIES QUESTIONNAIRE
ACTIVITIES QUESTIONNAIRE

This questionnaire concerns your attitudes towards the things which you and other workers like you do when you are not working. Your answers to the items are to be recorded on the separate answer sheet which has been provided. Please make sure that the answer sheet you are using has the words "Activities Questionnaire" at the top.

Answer each item carefully, and be sure to answer every question. Remember, I am interested in YOUR attitudes so please select those alternatives which best describe YOU.
1. Approximately how often do you take time to work in your yard? (check one)
   (a) Every day.
   (b) Several times each week.
   (c) Several times each month.
   (d) I seldom spend time working on my yard.
   (e) I never spend time working on my yard.

2. About how often do you work on or around your house making minor repairs, painting or fixing things? (check one)
   (a) Every day.
   (b) Several times each week.
   (c) Several times each month.
   (d) Several times each year.
   (e) I seldom spend time on my house.
   (f) I never spend time on my house.

3. Approximately how often do you get together with the people in your neighborhood for things such as picnics, parties, barbeques, cards, etc.? (check one)
   (a) Several times each week.
   (b) Several times each month.
   (c) Several times each year.
   (d) Very seldom.
   (e) Never.

4. Approximately how often do you get together with members of your family for things such as picnics, parties, barbeques, cards, etc.? (check one)
   (a) Several times each week.
   (b) Several times each month.
   (c) Several times each year.
   (d) Seldom.
   (e) Never.

5. Have you ever gone door-to-door to raise funds for a charity or to campaign for someone? (check one)
   (a) No.
   (b) Yes, once.
   (c) Yes, several times.
6. Do you belong to a union? (check one)
   (a) Yes.
   (b) No.

If you answered "No" to the above question, please turn to the next page and answer question 11. If you answered "Yes" to question 6 then please answer the following questions.

7. About how many of the union meetings have you attended in the past year? (check one)
   (a) All of them.
   (b) About 3/4 of them.
   (c) About one half of them.
   (d) About 1/4 of them.
   (e) Very few of them.
   (f) None of them.

8. Have you ever held an office in the union? (check one)
   (a) I have never held a union office.
   (b) I have held a union office once.
   (c) I have held a union office more than once.

9. Have you ever served on a committee in the union? (check one)
   (a) I have never served on a union committee.
   (b) I have served on a union committee once.
   (c) I have served on a union committee more than once.

10. What things do you usually do at union meetings? (check as many as apply)
    (a) Sit and listen mostly.
    (b) Ask questions.
    (c) Bring up grievances.
    (d) Make motions and/or second motions.
    (e) Answer questions that other people bring up.
    (f) Talk about something being discussed.
11. Are you a member of any formal social clubs such as the Lions, Elks, PTA, Kiwanis, Nationality clubs, veterans organizations, etc.? (check one)

(a) Yes.
(b) No.

If you answered "No" to the above question then please turn the page and answer question 17. If you answered "Yes" to question 11 then please answer the following questions.

12. Approximately how many organizations of the type mentioned in question 11 do you belong to? (check one)

(a) One.
(b) Two.
(c) Three.
(d) Four or more.

13. About how often do you attend the meetings of the clubs or organizations to which you belong? (check one)

(a) I attend all the meetings.
(b) I attend about 3/4 of the meetings.
(c) I attend about one half of the meetings.
(d) I attend about one forth of the meetings.
(e) I seldom attend the meetings.
(f) I never attend the meetings.

14. What things do you usually do at these meetings? (check as many as apply)

(a) Sit and listen mostly.
(b) Ask questions.
(c) Make motions and/or second motions.
(d) Answer questions that other people bring up.
(e) Talk about something being discussed.

15. Have you ever held an office in one of these organizations? (check one)

(a) No.
(b) Yes, once.
(c) Yes, several times.

16. Have you ever served on a committee in one of these organizations? (check one)

(a) No.
(b) Yes, once.
(c) Yes, several times.
17. Are you a member of a church or synagogue? (check one)

(a) Yes.
(b) No.

If you answered "No" to the above question then turn the page and answer question 21. If you answered "Yes" to question 17, then please answer the following questions.

18. About how often do you attend church or synagogue? (check one)

(a) Once a week.
(b) Once every other week.
(c) About once a month.
(d) About once or twice a year.
(e) Very seldom.
(f) Never.

19. How active are you in church-related groups such as auxiliaries, fellowship clubs, etc? (check one)

(a) I am not active in groups of this type.
(b) I am somewhat active in groups of this type.
(c) I am active in groups of this type.
(d) I am very active in groups of this type.

20. Have you ever held an office in one of these church or synagogue-related groups? (check one)

(a) No.
(b) Yes, once.
(c) Yes, several times.
21. Do you belong to or are you associated with any athletic teams such as a bowling team, a baseball team, etc.? (check one)

(a) Yes.
(b) No.

If you answered "No" to the above question please turn the page and answer question 25. If you answered "Yes" please answer the following questions.

22. About how many athletic teams or groups are you associated with? (check one)

(a) One.
(b) Two.
(c) Three.
(d) Four or more.

23. How active a participant are you on the teams to which you belong? (check one)

(a) I am just a member and don't participate.
(b) I am somewhat active.
(c) I am an active member of the team(s) to which I belong.
(d) I am a very active member of the team(s) to which I belong.

24. Have you ever coached or helped coach any little league teams? (check one)

(a) Yes.
(b) No.
25. Approximately how many times in the past year have you gone fishing, hunting, boating, etc.? (check one)

(a) Never.
(b) Once.
(c) Twice.
(d) Three times.
(e) Four or more times.

26. About how often do you work with tools to either build or repair something in your spare time? (check one)

(a) Every day.
(b) Several times each week.
(c) Several times each month.
(d) Several times each year.
(e) Very seldom.
(f) Never.

27. Approximately how many times in the past year have you gone golfing, bowling, played tennis, etc.? (check one)

(a) Never.
(b) Once.
(c) Twice.
(d) Three times.
(e) Four or more times.
APPENDIX E

JOB COMPLEXITY INDEX
### JOB COMPLEXITY INDEX

**SUBJECT:**

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<th>Responsible for own work and for own inspection</th>
<th>Responsible for work of 1-5 other men</th>
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<td>Sees boss constantly, can leave job at will</td>
<td>Sees boss several times each hour, leaves job at appointed time only</td>
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APPENDIX F

LETTER OF EXPLANATION
July 3, 1969

Dear (name of sponsoring organization) Employee:

Please allow me to introduce myself: my name is Joe Nevotti, I'm a graduate student at the University of Nebraska at Omaha, and I need your help. Currently I am engaged in a research project which requires the assistance of a number of men like yourself. Your name, as well as the names of over 100 of your fellow workers was selected randomly from all (name of sponsoring organization) employees to participate in this project. Basically, this research project concerns your feelings about your job.

The first reaction of a person who is asked to participate in such a project is usually "How will it influence my job?" or "Is the information which I give going to be used against me?" or "What a stupid waste of time!" Knowing this I feel it is only fair to give you a brief explanation of the purpose of the study as well as the manner in which your answers will be treated.

The purpose of this study is to attempt to learn what the worker feels about his job, and how these feelings influence his behavior both on and off the job. Studies very similar to this one have helped management become aware of and better understand the needs and problems of the worker. When management is able to understand the worker the result is improved human relations and a healthier organizational climate.

Although (name of sponsoring organization) is interested in the overall results of this study and has given me permission to contact you, no one individual will be singled out or identified. Your answers to all the questions will be kept ABSOLUTELY CONFIDENTIAL. Neither your supervisor nor the company will ever know what your responses were.

The collection of data will take place next Wednesday, July 9, in the conference center at (name of sponsoring organization) during your normal shift. Your foreman will tell you exactly when and where to go. You will be asked to fill out four questionnaires concerning your attitudes about your work, and this will take about one hour of company time.

In closing, let me re-emphasize one very important point: Your
July 3, 1969

responses to all questions will be kept ABSOLUTELY CONFIDENTIAL! The company will never know how you responded to any of the questions!

I would like to take this opportunity to thank you for cooperating in this research project. Your assistance is very much appreciated. If you have any questions please feel free to contact me at the university. My phone number is 553-4700, extension 502.

Cordially,

Joseph R. Nevotti II
Graduate Research Assistant
APPENDIX G

TWENTY VARIABLE INTERCORRELATION MATRICES
TWENTY VARIABLE INTERCORRELATION MATRIX (N=59)

| VARIABLES                  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 TENURE (months)          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 2 AGE                      |     | .328## |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 3 ABSENTEEISM (days)       | -.256## | -.216 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 4 INTELLIGENCE            | .242 | .272## | .105 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 5 I-E ORIENTATION         | -.185 | .085 | .014 | .094 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 6 SKILL LEVEL             | -.011 | .162 | .037 | .190 | .013 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 7 VARIETY                 | .364## | .346## | .406## | .061 | .180 | .754## |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 8 AUTONOMY                | .515## | .396## | .400## | -.105 | .190 | .391## | .830## |     |     |     |     |     |     |     |     |     |     |     |     |
| 9 TOTAL JOB COMPLEXITY    | .421## | .366## | .376## | .013 | .194 | .576## | .946## | .911## |     |     |     |     |     |     |     |     |     |     |     |
| 10 HOME                   | .151 | .044 | .175 | .044 | .314## | .054 | .187 | .273## | .251## |     |     |     |     |     |     |     |     |     |     |
| 11 UNION                  | .433## | .347## | .317## | .322## | .271## | .222 | .246 | .354## | .295## | .159 |     |     |     |     |     |     |     |     |     |
| 12 SOCIAL                 | -.079 | .183 | .043 | .115 | .324## | .202 | .300## | .179 | .240 | .263## | .262## |     |     |     |     |     |     |     |     |     |
| 13 CHURCH                 | -.016 | .092 | .105 | .162 | -.214 | .014 | -.091 | -.097 | -.121 | -.323## | .305## | .357## |     |     |     |     |     |     |     |     |
| 14 ATHLETIC               | -.024 | .162 | .114 | -.050 | -.555## | .068 | .059 | .081 | .055 | .310## | .249 | .185 | .217 |     |     |     |     |     |     |     |
| 15 INDIVIDUAL             | .182 | .285## | .186 | .258## | .231 | -.058 | -.054 | .100 | .010 | .405## | .213 | .001 | -.035 | .367## |     |     |     |     |     |
| 16 NON-JOB ACTIVITIES     | .115 | .050 | .039 | .118 | -.515## | .005 | .102 | .223 | .168 | .693## | .468## | .556## | .609## | .677## | .437## |     |     |     |     |
| 17 MOTIVATOR FRUSTRATION  | .087 | .152 | .184 | .105 | .264## | .172 | .083 | .170 | -.084 | .009 | .118 | .193 | .306## | .130 | .066 | .228 |     |     |     |
| 18 HYGIENE FRUSTRATION    | -.027 | .049 | .233 | .214 | .276## | .023 | .021 | .058 | .058 | -.026 | .112 | -.069 | .129 | .1043 | .082 | .038 | .670## |     |     |
| 19 TOTAL JOB FRUSTRATION  | .067 | .073 | .224 | .104 | .294## | .119 | .042 | .080 | -.031 | -.018 | -.023 | .153 | .252## | .102 | .080 | .161 | .936## | .684## |     |
| 20 TARDY (days)           | .054 | .072 | .182 | .103 | .103 | .069 | .204 | .198 | .215 | -.046 | .083 | .152 | .049 | .213 | .122 | .142 | .008 | -.032 | .101 |

MEAN: 37.78 29.02 5.14 19.66 77.75 3.36 5.41 6.37 15.20 9.49 2.31 2.58 2.93 2.05 8.78 301.2 49.34 39.14 88.49 3.73

STANDARD DEVIATION: 24.65 6.65 5.27 6.11 3.74 0.61 1.30 1.66 3.23 3.70 3.65 5.31 2.96 2.94 3.11 29.3 25.17 19.24 41.59 6.73

*Significant at .05 level
**Significant at .01 level
TWENTY VARIABLE INTERCORRELATION MATRIX (N=100)

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*Significant at .05 level
**Significant at .01 level
APPENDIX H

INTERCORRELATION MATRICES FOR Ss WITH ABOVE AND BELOW AVERAGE INTELLIGENCE
TWENTY VARIABLE INTERCORRELATION MATRIX FOR Ss WITH ABOVE AVERAGE INTELLIGENCE (N=25)

| VARIABLES                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 TENURE (months)                |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 2 AGE                            |  .251 |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 3 ABSENTEEISM (days)             | .323 | .048 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 4 INTELLIGENCE                  | .104 | .100 | .310 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 5 I-E ORIENTATION                | .154 | .356 | .015 | .016 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 6 SKILL LEVEL                    | .225 | .121 | .273 | .051 | .0076 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 7 VARIETY                        | .388 | .269 | .280 | .183 | .263 | .525 |     |     |     |     |     |     |     |     |     |     |     |     |
| 8 AUTONOMY                       | .388 | .206 | .120 | .109 | .434 | .369 | .827 |     |     |     |     |     |     |     |     |     |     |     |
| 9 TOTAL JOB COMPLEXITY           | .349 | .296 | .103 | .144 | .336 | .505 | .928 | .872 |     |     |     |     |     |     |     |     |     |     |
| 10 HOME                          | .379 | .133 | .345 | .089 | .146 | .191 | .151 | .189 | .209 |     |     |     |     |     |     |     |     |     |
| 11 UNION                         | .191 | .112 | .116 | .090 | .348 | .231 | .194 | .059 | .126 | .165 |     |     |     |     |     |     |     |     |
| 13 CHURCH                        | .319 | .205 | .401 | .055 | .220 | .362 | .075 | .075 | .205 | .316 | .418 |     |     |     |     |     |     |     |
| 14 ATHLETIC                      | .376 | .131 | .351 | .018 | .452 | .100 | .220 | .031 | .022 | .038 | .613 | .230 | .011 |     |     |     |     |     |
| 15 INDIVIDUAL                    | .067 | .121 | .280 | .288 | .091 | .184 | .013 | .098 | .152 | .256 | .331 | .067 | .206 | .461 |     |     |     |     |
| 16 NON-JOB ACTIVITIES            | .010 | .125 | .066 | .115 | .413 | .167 | .057 | .155 | .057 | .571 | .759 | .471 | .513 | .679 | .595 |     |     |
| 17 MOTIVATOR FRUSTRATION         | .004 | .026 | .219 | .066 | .387 | .288 | .260 | .475 | .245 | .233 | .136 | .043 | .167 | .064 | .135 | .027 |     |
| 18 HYGIENE FRUSTRATION           | .121 | .105 | .137 | .011 | .191 | .139 | .108 | .099 | .075 | .247 | .078 | .070 | .149 | .072 | .319 | .131 | .656 |     |
| 19 TOTAL JOB FRUSTRATION         | .054 | .066 | .202 | .037 | .333 | .246 | .214 | .344 | .189 | .262 | .048 | .006 | .175 | .073 | .235 | .045 | .934 | .880 |
| 20 TARDY (days)                  | .144 | .110 | .160 | .223 | .160 | .233 | .179 | .116 | .122 | .038 | .233 | .225 | .006 | .310 | .105 | .218 | .099 | .007 | .059 |

* Significant at .05 level
** Significant at .01 level
TWENTY VARIABLE INTERCORRELATION MATRIX FOR Ss WITH 
BELOW AVERAGE INTELLIGENCE (N=34)

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MEAN

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STANDARD DEVIATION

|                        | 27.18  | 9.40   | 5.41   | 3.50   | 3.97   | 0.54   | 1.38   | 1.76   | 3.32   | 3.66   | 4.25   | 5.67   | 3.26   | 2.98   | 3.21   | 29.98  | 23.59  | 17.29  | 38.19  | 8.46   |

*Significant at .05 level

**Significant at .01 level