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MILLER, MABRY BATSON

INDIVIDUAL DIFFERENCES AND FELT STRESS IN WORK

The Ohio State University

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INDIVIDUAL DIFFERENCES AND FELT STRESS IN WORK

DISSERTATION

Presented in Partial Fulfillment of the Requirements
for the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Mabry Batson Miller, B.A., M.B.A.

* * * * *

The Ohio State University

1981

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This work is dedicated to my husband,
Harry, who had confidence in my ability
to accomplish the task.
ACKNOWLEDGMENTS

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CHAPTER I. THE IMPORTANCE OF STRESS

Introduction

Two major reasons for studying stress are (a) its impact on worker performance, and (b) its effect on the total quality of life. Many writers, including Levinson (1970), recognize the significance of work as a major contributor to stress in the lives of individuals in today's complex society. Specifically, others, such as Brummet, Pyle, and Flamholtz (1968), suggest that managers suffer extreme physiological stress at work which forces them to retire from active organizational life before they have had an opportunity to fully actualize their potential. Associated with stress are such symptoms as heart attacks, high blood pressure, ulcers, use of drugs, frustration, aggression, dissatisfaction, absenteeism, and decreased performance. Severe as these symptoms are, they may be only the 'tip of the iceberg' (Schuler, 1979).

Looking below the 'tip of the iceberg' we see that work is not the only aspect of the total stress syndrome. Stress related effects also feed into the family, becoming potential sources of disturbance and thus pervading the whole quality of life for the individual. It is in these two specific areas—the effect of stress on worker performance, or the economic aspect; and the impact of stress on total life quality—that further research is needed.
Also, in order to adequately evaluate the impact of stress, it is important to examine those characteristics of the individual that research evidence indicates are predisposers to stress. Sources of pressure at work and elsewhere evoke different reactions from different people. Some people are better able to cope with these stressors than others; they adapt their behavior in such a way as to meet the challenges, opportunities, and constraints encountered. On the other hand, there are those individuals who are more predisposed to stress; they are unable to cope or adapt to the stress provoking situation (Cooper & Marshall, 1978). Therefore, we incorporate personal characteristics into this study of stress and its relevance to performance and life quality.

The remainder of this chapter includes a brief review of previous research on stress, a typology of research efforts, and the primary purpose of this study. Chapter II deals with (a) definitions of stress, including the one to be used here; and (b) individual differences and the nature of the relationship between an individual's personality, needs, etc., and the overall stress process.

The research problem is explained in Chapter III, followed in Chapter IV by a review of the literature. Chapter V discusses the design of the study and methodology to be employed, including (a) Introduction, (b) Sample, (c) Stressful incidents, (d) Hypotheses, (e) Instruments, (f) Procedure, and (g) Data analysis. Chapter VI presents the results obtained from the survey. The concluding chapter points out the significance of the study and its relevance to problems encountered by individuals in work organizations and their overall quality of life.
Previous Emphases

Early interest in stress spawned numerous independent efforts and emphases, such as Selye's (1956) work on nonspecific stress and the arousal syndrome; Helson's (1948) adaptation level theory; work on sensory deprivation (Ruff, Levy, and Thaler, 1959; Solomon, Leiberman, Mendelson, and Wexler, 1957; Wexler, Mendelson, Leiberman, and Solomon, 1958); studies of developmental effects of impoverished environments (Davis, McCourt, Courtney, and Solomon, 1961; Cohen, 1958); voluminous research on social conflict, conformity, dissonance (Allen, 1965; Brehm and Cohen, 1962); role stress—conflict and ambiguity (Kahn, Wolfe, Quinn, Snoek, and Rosenthal, 1964; Van Sell, Brief, and Schuler, 1978); coping mechanisms (Burke and Belcourt, 1974; Hall, 1972); and other areas. A classification of these research efforts is given in the next section.

Typology of Research Efforts

Writings on stress fall into three major categories, those presenting (a) models of stress—conceptual schemes relating stress and stress-producing phenomena, (b) investigations into sources and causes of stress—specific studies of various stress-producing environments, such as the family, the social system, personality, work and organization; (c) studies of manifestations of stress—specific studies of psychological and psychosomatic dysfunctions.

Most of the research that has been done thus far has dealt primarily with stress manifestations, with relatively less effort being made in the other two categories.
Purpose of This Study

Although some investigators have looked at various possible causes of stress, such as pressures at work, domestic problems, and personal illness, more work needs to be done specifying the important of individual differences and personality traits as they either exacerbate or diminish the actualizing effect of potentially stressful incidents. This study focuses on the role of differences in three aspects of personality as moderators of responses to stressors:

1. **Primary needs** - For some individuals the primary need in life is achievement, while for others the need which dominates may be that of affiliation or the quest for power (McClelland, 1961).

2. **Work versus nonwork activities** - Individuals vary in the degree to which they are committed to work or nonwork activities (Dubin, 1956).

3. **Internals/externals** - Internally oriented persons believe that events in their lives are under their own control, while externally oriented persons believe that reinforcements are not under their control nor are they contingent on their behaviors (Rotter, 1966).

The next chapter introduces and formally defines the key concepts relevant to the study of stress and to the specific study proposed here.
CHAPTER II. KEY CONCEPTS

Stress

According to Lazarus (1971), attempts to define stress and related concepts make for dull reading. Nonetheless, there is a proliferation of efforts in this direction. Kasl (1978) has suggested the following categorization of definitions:

(1) Enumeration of environmental conditions which are to be considered as stressful (e.g., Weitz, 1970; McGrath, 1976).

(2) Restating the concept by using some other word, such as:
   (a) stress as strenuous effort...to maintain essential functions...at a required level (Ruff and Korchin, 1967),
   (b) stress as 'information' interpreted as threat of loss or injury (Lipowski, 1975),
   (c) stress as frustration and threat which cannot be reduced (Bonner, 1967),
   (d) stress as unpredictability of the future (Groen and Bastiaans, 1975).

(3) Defining it in terms of some 'essential' characteristics, such as:
   (a) unavailability of adequate responses (Sells, 1970),
   (b) situations which are new, intense, rapidly changing, unexpected (Appley and Trumbull, 1967),
   (c) in terms of motives involved in specific situations such as achievement (Pepitone, 1967).

(4) Attempting greater conceptual precision in order to enhance the usefulness of the term in future efforts of hypothesis testing and theory building; in this regard McGrath's (1970a) definition of stress as a perceived substantial imbalance between demand and response capability, under conditions where failure to meet demand has important consequences seems to have had the widest acceptance (Lazarus, 1971). It is also the definition most similar to the person-environment fit formulation (Berger, 1969; Dawis, England and Lofquist, 1964; French, 1974; Lofquist and Dawis, 1969; Veroff and Feld, 1970).
Other definitions, though perhaps not fitting neatly into the categories listed, have been advanced. Rogers (1977) for example, describes stress as a phenomenon that encompasses social, psychological, and physiological imperatives and defines it as a relationship that affects the individual and his environment. Parsons (1966) also involves the environment in his definition of stress as external situations associated with internal states which lead to avoidance and escape behavior. In this sense stress, for Parsons, is what we escape or avoid.

Stress for some, such as Weitz (1966), is a stimulus variable, while others such as Appley and Trumbull (1967) have taken the position that "stress is probably best conceived as a state of the total organism under extenuating circumstances rather than as an event in the environment." Sells (1970) recognizes the fact that psychologists differ on the issue of whether stress is an external entity or a state of the organism. He proposes that a state of stress arises under the following conditions:

1. The individual is called upon to respond to circumstances for which he has no adequate response. The unavailability of an adequate response may be due to physical inadequacy; absence of the response in the individual's response repertoire; lack of training, equipment, or opportunity to prepare.

2. The consequences of failure to respond effectively are important to the individual. Personal involvement in situations can be defined in terms of importance of consequences to the individual (Sells, 1970).

McGrath (1970) indicates that stress occurs when there is a substantial imbalance between environmental demand and the response
capability of the focal organism. This imbalance may be caused by certain kinds of stimulating conditions which threaten the essential values of an individual and are likely to produce disturbing effects. Such stimuli, by their explicit threat to vital functioning and their intensity, are likely to overload the capacity of the individual’s coping mechanism. According to McGrath, stress should not be considered as imposed upon an individual but rather as his response to internal or external processes which reach those threshold levels that strain his physiological and psychological integrative capacities close to or beyond their limits.

After careful consideration of these various definitions one can agree with Selye (1959) who states that "stress like life itself, though very real, is not easy to define in precise terms." The definition of stress used here incorporates several aspects of previous stress definitions, including the fact that it may be externally or internally induced and that it exists either in reality or in the perception of the individual. Stress, then, is a force that affects an individual and evokes responses that may be physical, psychological, and/or behavioral. Such forces may be in the form of opportunities, demands, and constraints relating to the fulfillment of the individual's needs, interests, and orientations. Here we recognize the fact that there is a wide diversity in the needs, interests, and orientations of different people, so that what may be important for one person may not have significance for another. The more important the outcomes in the fulfillment of those needs, interests, and orientations, the more potential there is for the individual to experience stress.
Individual Differences

In General Terms

"If there is any one characteristic of people which is universally valid and important, it is that they differ. As a matter of fact, people differ greatly in intelligence, aptitudes, physical strength, manual dexterity, knowledge, skill, interest, personality traits, motivation, and many other attributes which potentially influence behavior and productivity (Williams, 1978, 359)."

In general, individual differences may be defined in terms of various personality "traits," personality being considered to be the dynamic organization within individuals of those psychophysical systems that determine an individual's unique adjustments to his/her environment (Warren and Carmichael, 1930).

Specific Dimensions

Having defined individual differences in general terms, let us turn now to specific differences to be considered in this study. These can be divided into three areas:

1. Central Life Interest

In his 1956 paper which focused attention on work and its standing as a central life interest, Dubin produced evidence to show that for almost three out of four workers studied, work is not the central life interest, but that the urban world, with its emphasis upon secondary and instrumental social relationships, might indeed be a world in which work has become secondary as a life interest. His Central Life Interest Questionnaire was designed to determine whether the job and workplace were central life interests of workers or whether other areas of their social experience were important to them; workers were rated as
job-oriented or non-job-oriented. Results of one group of his studies indicate that 90% of those individuals who participated in the investigation preferred primary interactions with others elsewhere than on the job. Dubin suggests that workers for whom work is not a central life interest probably do what is expected of them, but that they do not obtain their primary satisfaction from their work. They do not view their work as being particularly important beyond the externally-administered outcomes it provides (Dubin and Goldman, 1972). Although Dubin recognizes that some individuals, such as entrepreneurs, make work the central interest in their lives, he suggests that "work is no longer the central life interest for workers. These life interests have moved out into the community."

2. Needs or Motives

Some needs or motives—such as those for food, clothing, and shelter—are rather temporary in nature. Others, however, are more enduring and less easily satisfied. Such motives include the need for achievement, need for affiliation, and need for power.

The need for achievement (or n Ach, as abbreviated by McClelland, 1961), reflects a strong goal orientation, an obsession with the desire for accomplishment. The need for affiliation reflects the individual's desire to establish, maintain, or restore pleasant emotional relationships with other people. A third need, the need for power, is the desire to exert control or influence over other people.

3. Locus of Control

Locus of control is a dimension based on belief systems. It can be defined as the degree to which a person believes that one's own actions can influence one's outcomes. Internals believe their behavior to be
relatively decisive in determining their fate. Externals, on the other hand, believe that chance, luck, or powerful agencies exert a strong influence on what happens to them. Internals seem to be attracted to situations that offer possibilities for individual achievement. For example, internals often experience greater academic success than do externals, and they do so by a margin not explainable in terms of purely intellectual abilities (Hamner and Organ, 1978).

Having presented several definitions of stress (including the one used here), a general definition of individual differences and of the three specific dimensions to be used in this study—central life interest, needs and motives, and locus of control—we now turn to the major issue to be addressed; the moderating effects of these individual differences on the degree or level of stress actually felt or experienced by the subjects to be included in the investigation. Although beyond the scope of this study, a further prediction would be that these individual differences would, in turn, lead to variances in the responses and coping mechanisms. Chapter III deals with the research problem.
CHAPTER III. THE RESEARCH PROBLEM

The problem to be investigated in this study is the effect that individual differences and personality traits have on the manner and degree to which individuals actually experience stress in certain potentially stressful situations.

Investigators of stress generally assume that all stressful incidents produce similar or identical physiological, psychological, or behavioral outcomes for all individuals; therefore, most studies of stress use certain individual characteristics as moderators of the relationship between stressors as experienced by individuals and stress symptoms (such as physical disturbances) or outcomes (Cooper and Marshall, 1976; Beehr and Newman, 1978). However, in this investigation the individual difference variables will be used as moderators in determining the level of stress actually felt by individuals. The distinction between the two notions is shown in Figures 1 and 2.

\[\text{Stressor} \quad \uparrow \quad \text{Outcomes} \]
\[\quad \text{Moderators} \quad \text{Symptoms}\]

FIGURE 1

TYPICAL APPROACH OF STRESS RESEARCH
Information on this issue is crucial for advancing the present state of knowledge about stress, and any answers obtained should provide some heuristics for practicing managers to aid in selection, placement, and job design for situations involving job-based stress.

In developing this line of reasoning we consider: (1) the environment (external, internal) which demands something of the individual; (2) whether or not that demand is perceived by the individual; and (3) individual responses to the demand and effects the responses may have on the environment which created the demand.

In order to ascertain the appropriateness and adequacy of the response to stress it is necessary to look at a whole range of consequences both for the individual and for those others with whom he interacts. An important point is the capacity of the individual to handle the stressful situation. If stress is the result of an interaction of organism with situation, then it is crucial to investigate both: (1) whether different individuals react differently to a given situation; and (2) whether a given individual reacts differently to several different situations (McGrath, 1970). For example, Anderson, Hellriegel, and Slocum (1977) present evidence to show that internal managers are more likely to outperform externals in a stress situation.

FIGURE 2
MODIFIED APPROACH TO THE STUDY OF STRESS
Real life situations evoke a wide variety of emotional responses from individuals, depending to a considerable degree on internal predisposition. Stress as experienced by individuals cannot be defined independently of the life situation and the response to it. It is as impossible to separate the objective stimulus from its meaning as it is impossible to differentiate reality from its idea, or fear from anxiety. However, we can reasonably postulate a continuum of events ranging from situations which evoke anxiety in all people to those which are uniquely meaningful for the individual (Basowitz, Persky, Korchin, and Grinker, 1955).

The central theme of this study is the issue of these individual differences and personality characteristics, as persons respond to various potentially stressful situations. Hypotheses are concerned, therefore, with the conversion of stressful incidents into actual felt stress, dependent upon the moderating effects of the personal traits and characteristics of the individual. They can be stated as follows:

Hypothesis I (a). Persons for whom work is the central life interest will experience greater stress from critical job-related incidents than will those for whom nonwork activities are of primary importance.

Hypothesis I (b). Persons for whom nonwork activities are of primary importance will experience greater stress from critical family-related incidents than will persons for whom work is the central life interest.

Hypothesis I (c). Persons for whom nonwork activities are of primary importance will experience greater stress from critical
personal incidents than will persons for whom work is the central life interest.

Hypothesis II (a). Persons who are high need achievers will experience greater stress from achievement-related incidents than will low need achievers.

Hypothesis II (b). Persons who are high in need for affiliation will experience greater stress from affiliation-related incidents than will persons who are low in need for affiliation.

Hypothesis II (c). Persons who are high in need for power will experience greater stress from power-related incidents than will persons who are low in need for power.

Hypothesis III (a). Persons who believe that they have no control over events in their lives (externals) will experience greater stress from critical work-related incidents than will persons who perceive events in their lives to be under their own control (externals).

Hypothesis III (b). Externals will experience greater stress from critical family-related incidents than will internals.

Hypothesis III (c). Externals will experience greater stress from critical personal incidents than will internals.

These hypotheses are designed to investigate the relationship of felt stress to all aspects of an individual's life—work, personal, and family-related events.
A review of literature on stress and individual differences as they relate to stress will now set the stage for the investigation which is to follow. The review is found in Chapter IV.
CHAPTER IV. LITERATURE REVIEW

An extensive review of the literature on stress was done in order to get a view of the breadth of the field; however, in this study only selected aspects will be examined. The review presented here follows the schematic shown in Figure 3.

\[ \text{Situations} \rightarrow \text{Felt Stress} \rightarrow \text{Response} \]

\[ \text{Individual difference} \rightarrow \text{Individual difference} \]

\[ \text{moderators} \rightarrow \text{moderators} \]

FIGURE 3

APPROACH FOR THIS STUDY

Stressful Situations

A study of the literature reveals a formidable list of more than forty interacting factors which might identify stressful situations at work. Cooper and Marshall (1975) have presented seven major categories, ranging from individual-centered to total environment-centered. A brief summary of their findings is presented here.

1. Factors intrinsic to the job, such as too little or too much work, time pressures and deadlines, too many decisions, excessive travel, long hours, changes at work, and the expense of making mistakes.

2. Role in the organization; includes role conflict and ambiguity, no participation in decision-making, too little responsibility, and lack of managerial support.

3. Relations within the organization; poor relations with boss, poor relations with colleagues and subordinates, personality conflicts.
4. Career development in the organization; lack of job security, fear of retirement, thwarted ambition, sense of being trapped.

5. Being in the organization; no sense of belonging, uncertainty about what is happening, loss of identity, office politics.

6. Organization interface with outside; divided loyalties (company versus one's own interests), conflicts with family demands.

7. Intrinsic to the individual; personality (tolerance for ambiguity, etc.), inability to cope with change, lack of insight into own motivation and stress, declining abilities, ill equipped to deal with interpersonal problems, fear of moving out of area of expertise.

Another situation which might induce stress, not mentioned by Cooper and Marshall, is the press of time (Hall and Lawler, 1971).

Stress as a psychological condition has an inherent temporal aspect. McGrath's (1970) definition of stress as the anticipation of inability to respond adequately to perceived demand, accompanied by anticipation of negative consequences for inadequate response, implies a temporal context as a precondition for the occurrence of stress.

Individual Difference Moderators

In relationship to stress, Brief (1980) notes that a number of individual characteristics partially determine a person's psychological responses to sources of stress. Since perception is an important aspect of stress, and an individual's unique qualities affect his perceptions, then his personal characteristics influence his perception of potential stressors.

Included in his discussion of general themes and variations, McGrath (1970) proposes that stress is in the eye of the beholder, and that emotional experiences, and to some extent physiological and performance measures, are in part a function of the perceptions, expectations, or cognitive appraisal which the individual makes of a stressing
situation. It has been suggested, also, that prior experience with the task, the stressor, and/or the situation attenuates the amount of stress actually felt by the individual.

According to Mechanic (1970), persons who have well-developed skills to meet challenges and environmental demands are less likely to suffer discomfort and loss of confidence. In other words, the adequacy of preparation, as perceived by the individual, is one of the major determinants of what situations are felt to be stressful.

Lazarus (1976) suggests that although, usually, stress is aroused when there are objective dangers or harms, how the individual evaluates or appraises the significance of the event for his/her well-being determines whether the person will experience stress and to what degree. Personality factors contributing to perceptions of possible stress include strong motivation or commitment to some goal or outcome and the general belief that one is capable of mastering an environment characterized as dangerous or hostile. Persons with such an outlook, according to Lazarus, are likely to feel stress by merely being in a new or unfamiliar situation. It follows, then, that relatively stable individuals feel less stress from potentially stressful incidents than do those individuals with less well-defined personality traits.

The degree to which a person's family, job, and affiliations play a dominant role in the total life situation will have significant bearing on how that individual perceives stressful incidents, and the overall situation is important in providing insight into the ways in which pressures and potential stressors have cumulative or compensating effects, both at a single point in time and over an extended period. Individual differences form the basis of a person's perceptions of
incidents as stressful, and help to determine the coping mechanisms employed.

Central Life Interest

There is a scarcity of empirical evidence on the subject of central life interest. Most studies which have been performed (e.g., Rapoport and Rapoport, 1975) divide life interests into the three areas of work, family, and leisure, and suggest that if the activities, responsibilities, and role of an individual do not correspond to the personal dispositions with regard to these areas then stress will follow.

Dubin (1956), however, provides a useful concept of central life interest. He suggests that many workers do not expect to find personal fulfillment in work, so they channel their higher order needs into nonwork-related activities, such as hobbies, home repairs, etc.

Handy (1978) suggests that an individual's priorities and central life interests change as he/she moves through the stages of life. If the roles, perceptions, and activities of the individual do not change accordingly there is likely to be stress.

As an example of differing and changing central life interest, Fogarty, Rapoport, and Rapoport (1971), in a study of college graduates, found that career was the central life interest for 53% of the single men but that this gave way to the family (59%) when they were married and had children, with career declining to 29%. For women the difference was more marked; forty-two per cent of the single women preferred career and 43% "other", but 82% of the mothers put family first.

Many people, including some successful managers, have never reflected on their total situation long enough to decide what is important,
according to Williams (1978). As a result, he suggests, they attempt to achieve career success while neglecting other aspects of their lives, such as family, religion, health, and recreation. The stress generated by the neglect in these areas is carried over to the job and effectiveness on the job is thereby undermined.

On the other hand, many people have very little life outside their work, particularly at executive levels, where their outside interests are usually structured around job demands (Cooper and Marshall, 1975). So far little more than lip service has been paid to the fact that the job is only one part of any individual's total life situation, and a part to which that individual can be either deeply or superficially committed. The part that work does play in an individual's overall life pattern will have great bearing on that person's perception of situations, both at work and at home, and the degree of work stress.

Another example of central life interest as an individual difference variable is shown by the Rapoports (1965), who found that work is the central life interest when the occupational role is highly individualized, notably among the professions. Other high-status occupations, e.g., executives in large corporations, demand a similar primacy of commitment, with perhaps somewhat less scope for individualized participation but with other incentives for a high degree of involvement. Where especially gratifying incentives do not exist, as in the lower-status occupations, work has less salience, or it may take on negative significance, with different kinds of repercussions on family life.

Many individuals, especially blue-collar workers, do not see their jobs as their central life interest. Instead, they are community-
home-centered. Unlike managers and professionals who are assumed to view work and its challenges as sources of meaning in their lives, these individuals view their jobs as instrumental to the attainment of security and money with which to pursue various extra-work (nonwork) activities (Fein, 1973; Goldthorpe, Lockwood, Beckhofer, and Platt, 1968).

**Needs**

Another means of distinguishing one individual's personality from that of another is by means of specific needs. Murray's (1938) need theory, as developed by McClelland (McClelland, Atkinson, Clark, and Lowell, 1953) and Atkinson (1958), posits that motivated behavior is in large measure a function of the strength of various needs, and more importantly, the manifest need for achievement (McClelland et al, 1953; Steers, 1975). And, in spite of the potential importance of need for achievement (n Ach) within the larger organizational behavior literature, only one study (Johnson and Stinson, 1975) has examined this need as a potential moderator of personal responses to role perception.

In the Morris and Snyder (1979) study, need for achievement for a sample of 262 public sector employees was measured with relevant scales from the Manifest Needs Questionnaire (Steers and Braunstein, 1976). Data from the study provide evidence that need for achievement may have value as an independent predictor, along with role perceptions, when certain outcomes are involved. The findings suggest that researchers should give increased attention to the practical significance of results involving individual needs in organizational research.

Since McClelland's (1961) theory is the origin of one of the individual difference measures to be utilized in this study, it should be explained according to his interpretation. With regard to the need for
achievement, McClelland identifies a number of reliable behavioral manifestations of this need. People with a high need for achievement are attracted to tasks which challenge their skills and their problem-solving abilities; they have little interest in games in which luck is a major determinant of success. He finds that entrepreneurs and managers are especially likely to have high n Ach. He believes that the need for achievement is shaped rather early in life—in part by the culture and in part by parental styles which encourage children to take responsibility, promote independence in action, and reinforce achievement.

Another need identified by McClelland is that for affiliation (n Aff). Persons with strong needs for affiliation want primarily to be liked by others; getting along well with their co-workers is more important to them than how much the group accomplishes. Persons with high n Aff are more sensitive to other people's feelings than are those with high n Ach. They are attracted to tasks involving groups, while the high n Ach individual prefers working alone.

A third need in McClelland's classification is that for control or influence over people (need for power, or n Pow). A manager's need for power has been shown to be quite compatible with a leadership style which stresses the development and participation of subordinates.

Supporting McClelland's theory with regard to need for achievement is a study by Steers and Spencer (1977), which examined the effect of job scope and need for achievement on organizational commitment and performance among a sample of 115 managers in a midwest manufacturing firm. It was proposed that high n Ach subjects typically seek out challenging jobs, prefer to assume personal responsibility for problem solution, and prefer clear feedback on task performance. Results from this study
provide support for their hypotheses and indicate that the n Ach construct warrants further consideration as an important individual difference variable in future investigations of employee motivation and work behavior.

Another study which tested needs as determinants of certain behaviors is that of Dalton and Todor (1979). Utilizing the Steers and Braunstein (1976) Manifest Needs Questionnaire (one of the instruments used in this study), which measures achievement, affiliation, autonomy, and dominance, they found that the manifest needs of union stewards (particularly dominance and affiliation) account for a substantial amount of variance in the handling of grievances.

Locus of Control

The idea of internal/external control has received somewhat more attention from job stress researchers than some other personality characteristics. Internally oriented persons believe that reinforcements (i.e., rewards) in their lives are under their own control and are contingent upon their behaviors, while externally oriented persons believe that reinforcements are not under their control and are not contingent on their behaviors. Externals, thus, are believers in fate and luck (Joe, 1971; Rotter, 1966; Duffy, Shiflett, and Downey, 1977; Gregory, 1978).

A number of researchers have investigated individual differences and personality traits with the Rotter (1966) Internal-External Scale. In one analysis Collins (1974) recast the original 23-item, forced-choice format of Rotter into a 46-item Likert-scale format. He interpreted the findings from his study as demonstrating that an external person, as originally defined on Rotter's scale, believes in a difficult
and unjust world that is unpredictable and politically unresponsive. His evidence for a complex belief structure based on source of reinforcement supports Rotter's theory with regard to internal versus external control of reinforcement.

The locus of control concept was explored by Duffy, Shiflett, and Downey (1977) using a sample of 275 Army reservists in a replication of Collins' (1974) methodology. They felt that, in order to evaluate the usefulness of a more complex conceptualization of locus of control, it was important to place the results in the context of several other attitudinal and personality-related variables with relatively well-established properties. Data present evidence that people can and do distinguish among several relatively distinct sources of stress. Duffy et al. observed, also, that part of the growing interest in locus of control has been directed at its relationships with various work situation variables. For example, investigations have shown that individuals scoring high on externality are less satisfied and feel a greater degree of stress with their jobs than do internals.

Paramedical and support personnel at a major midwestern university medical center, and managerial, engineering, and supervisory personnel from a large southwestern manufacturing firm were subjects in a study done by Szilagyi, Sims, and Keller (1976) which provided indications that internals perceived less role conflict (hence, less stress) than did externals in the medical center situation but not in the manufacturing firm. However, it was suggested that longitudinal or experimental research efforts are needed to study causal relationships and to
investigate other influential or antecedent variables which may have an impact on the relationship between individual characteristics, role dynamics, and employee attitudes and behavior.

From his study of managers enrolled in an M.B.A. program, Evans (1974) reported evidence showing that internals perceived and responded to environmental contingencies more consistently than did externals. This would support the idea that internals have adequate responses more often than do externals.

State-Trait Anxiety

Other researchers have employed the Spielberger, Gorsuch, and Lushene (1970) State-Trait Anxiety Inventory in their investigations concerning stress. State Anxiety (A-State) is conceptualized as a transitory emotional state or condition of the human organism that is characterized by subjective, consciously perceived feelings of stress and apprehension, and heightened autonomic nervous system activity. A-States may vary in intensity and fluctuate over time. Trait anxiety (A-Trait) refers to relatively stable individual differences in stress proneness, that is, to differences between people in the tendency to respond to situations perceived as threatening with elevations in A-State intensity. As a psychological concept, trait anxiety or stress has the characteristics of a class of constructs that Atkinson (1964) calls "motives." Motives are defined by Atkinson as dispositions that remain latent until the cues of a situation activate them. Acquired behavioral dispositions, according to Campbell (1963), involve residues of past experience that predispose an individual both to view the world in
a particular way and to manifest "object-consistent" response tendencies.

Among the studies which have used this concept are those by Bartsch (1976); Joesting and Whitehead (1976); Salter, Meunier, and Triplett (1976); Lamb (1976); Auerbach and Edinger (1977); Bedell (1977); Deffenbacher and Shelton (1978); Loo (1978).

Two variables which some researchers have looked at in the study of stress are (1) the Introvert-Extrovert dimension and (2) Type A-Type B behavior. Although they will not be used in this study, a brief discussion of these phenomena is included in order to make the literature review more complete.

Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964), using 53 managerial level employees from several industries as subjects, found a significant positive relationship between role conflict and job-related stress for individuals classified as introverts. For individuals classified as extroverts, however, there was not any relationship between role conflict and job-related stress. In addition, a significant positive relationship between role conflict and job-related stress was found for individuals classified as flexible. No relationship was found for individuals classified as rigid.

Type A - Type B

A number of studies have addressed the issue of individual differences and their relationship to behavior in terms of personality types such as Type A and Type B. Type A individuals have been described by Burke, Weir, and DuWors (1979) as being totally involved and preoccupied with their work to the neglect of other life pursuits, unable to relax, frustrated in the work situation, significantly associated with a
positive attitude toward feelings of stress, and with a propensity for creating stressful environments for themselves. Their study reports evidence to show that such individuals do not improve the well-being and marital satisfaction of their wives.

Felt Stress

It has been pointed out that various situations at work can cause individuals to feel varying degrees of stress. A few examples from the literature will illustrate this point.

1) Work overload - In an early study, French and Caplan (1970) found that objective quantitative overload was strongly linked to cigarette smoking (an important risk factor or symptom of coronary heart disease). Persons with more phone calls, office visits, and meetings per given unit of work time were found to smoke significantly more cigarettes than persons with fewer such engagements. Breslow and Buell (1960) have also reported findings which support a relationship between hours of work and death from coronary disease. In an investigation of mortality rates of men in California, they observed that workers in light industry under the age of 45, who are on the job more than 49 hours a week, have twice the risk of death from CHD compared with similar workers working 40 or less hours a week. Another study on work load was carried out by Margolis, Kroes, and Quinn (1974) on a sample of 1496 employed persons, 16 years of age or older. They found that overload was significantly related to a number of symptoms or indicators of stress: escapist drinking, absenteeism from work, low motivation to work, lowered self-esteem, and an absence of suggestions to employers. The results from these and other studies (Quinn, Seashore, and Mangione, 1971; Porter and Lawler, 1965) are relatively consistent and indicate
that this factor is indeed a potential source of stress that adversely affects both health and job satisfaction.

2) Role ambiguity - Kahn et al. (1964) found that men who suffered from role ambiguity experienced low job satisfaction, high job-related tension, greater futility, and low self-confidence. Margolis et al. (1974) found a number of significant relationships between symptoms or indicators of physical and mental ill health and role ambiguity in their representative national sample (n = 1496).

3) Relationships at work - The most notable studies in this area are by Kahn et al. (1964), French and Caplan (1970), and Buck (1972). Both the Kahn et al. and French and Caplan studies came to approximately the same conclusion, that mistrust of persons with whom one worked was positively related to high role ambiguity, which led to inadequate communications between people and to "psychological strain in the form of low job satisfaction and to feelings of job-related threat to one's well being."

These examples could be augmented by many others to establish the importance of recognizing the various situations which may cause individuals to experience stress, but since they are not crucial to the development of the study reported here, they have not been included in this literature review.

Individual Differences as Moderators of the Relationship Between Felt Stress and Subsequent Behaviors (response).

Schroder, Driver, and Streufert (1967) suggest that the individual's perception of environmental stress influences the integrative complexity used in searching for the processing information needed to develop alternatives. Adaptive persons (those whose individual personalities allow them to minimize feelings of stress from certain
potentially stressful incidents) would be expected to function at a higher level of integrative complexity when the problem-solving situation is constant and relatively challenging and the environmental stress of time is maintained at a medium level.

In a report of the development of a questionnaire to measure role conflict and ambiguity in complex organizations, Rizzo, House, and Lirtzman (1970) suggest that role stress does not generate anxiety (felt stress) when leaving the organization is possible or when there is a strong desire to leave the system. Also, they propose that for certain levels of role stress, adaptive behavior reduces stress, and that for certain individuals inputs which might be viewed as stressful are rewarding. For example, violations of the chain of command may be considered by some to be stressful while for others they may provide an opportunity to gain visibility and recognition. Their study involved 199 salaried managerial and 91 technical employees in a large manufacturing company. The correlational analysis produced evidence to warrant further study on the significance of the individual differences as related to cause and effect.

Following the same trend of thought, McGrath (1970) suggests that if there are differences in the ability to turn on and turn off stress, then it would seem that those with greater flexibility or versatility are likely to be more effective copers. Individuals with only one level of sensitivity (perception)—whether that level is high, low, or moderate—would seem more likely to find themselves in situations where their particular level of sensitivity is nonadaptive or even maladaptive (McGrath, 1970). The differential sensitivity of individuals to the same stress-inducing conditions can be captured in the statement that
"one man's stress is another man's challenge."

Steiner, Anderson, and Hays (1967) note that preferences among behavioral strategies in stress situations are related to the personality characteristics of the individuals. The work of Steiner and his colleagues suggests that some individuals carry with them preferred coping techniques for handling interpersonal stress situations, that thus being forearmed they are less affected by incipient or actual interpersonal stress than others who do not carry such preferred coping modes. These subjects are confident of having adequate response capabilities to handle the impending demand; hence, they do not anticipate an inability to respond, and they thereby do not experience psychological stress.

In regard to reactions to stress, Houston (1972) reported that generally individuals found a threatening situation in which they had no control more stressful than one in which they had some control over the situation, and that subjects performed better in situations in which there was congruence between their beliefs about locus of control in general and their beliefs about the locus of control in the specific situation in which they were working. Pittman and Pittman (1979) reached similar conclusions. What emerges is a picture of person-situation fit. When an individual's locus of control is congruent with the actual locus of control in the environment, less severe consequences occur in response to stress. The results of several studies concerned with job stress extend this line of reasoning. Anderson (1977), for example, in a study of 102 owners of small businesses in a Pennsylvania community extensively damaged by a flood, found that internals were better able to adjust to an uncontrolled stressful
event than were externals, who withdrew and expressed feelings of anxiety, hostility, and anger.

Anderson and Schneier (1978) attempted to expand and clarify understanding of the relationship between personality (i.e., internal/external control) and behavior. Their sample consisted of 125 college students involved in three sections of an introductory course taught by one of the authors in the fall of 1975. All subjects completed a series of self-report instruments, including the California Psychological Inventory (Gough, 1957) and Rotter's (1966) Internal-External Control Scale. Results of the study support the Anderson, Hellriegel, and Slocum (1977) conclusions that internal managers are more likely to express a task orientation and to outperform externals in a stress situation.

Response to Stress

An adaptive individual has characteristics which enable him to develop methods of coping effectively with stressful situations, Lorsch and Morse (1974), for example, consider tolerance of ambiguity an essential factor in managing stress that is imposed by uncertain environments. Raynor (1974) pointed out the importance of the ability to manage the level of stress dictated by the risk involved in an activity. The career-adaptive individual may cope with stress by planning the future in a way that includes change (Mann, Siegler, and Osmond, 1968). Their results showed that both adaptive and nonadaptive managers worked more quickly under stress due to time and slowed down more when the stress was reduced. Role-adaptive managers indicated only one method of coping with stress that was different from that of the nonadaptive ones, and that was to have a more stable career locus,
perhaps because they see more challenge in the present situation or do not perceive it to be as stable as the nonadaptive do.

Hall and Lawler (1971) suggest that adaptivity is demonstrated if an individual changes his speed of decision making so that it is faster when under a high level of pressure and slower when such an influence is reduced to a medium level.

Basowitz, Persky, Korchin, and Grinker (1955) recognize the importance of individual differences when they suggested that response to potentially stressful situations is not a simple function of stress or stress sensitivity as revealed by chemical or psychological procedures, but rather it is complexly determined by the individual's personality, intelligence and skills, and by his personal and social experience.

With regard to the internal/external differentiation, Anderson (1977) conducted a study of 90 entrepreneurs as subjects which indicates that internals perceive less stress, employ more task-centered coping behaviors, and employ fewer emotion-centered coping behaviors than externals. His hypothesis that differences in locus of control lead to differences in the use of decision behaviors among managers and differences in stress perception in a stressful situation was supported.

Watson and Baumol (1967) found that internals are more highly motivated and better performers on tasks that are presented as skill-related, but the opposite is true when the same tasks are said to depend on luck or chance. A number of studies find internals to be more efficient at processing information (Wolk and DuCette, 1974), while externals are considered to feel more stress than internals.
Houston (1972) investigated the Watson and Baumol (1967) hypothesis that an individual's belief in internal versus external locus of control may help to explain differences in individual task performance in incongruent or stressful situations. Evidence from his laboratory experiment involving student subjects supports the idea that in stressful situations internal-control subjects perform at a higher level than do external-control subjects.

This review of the literature has considered stress research in terms of the following:

(1) Stressful situations, such as factors intrinsic to the job; role in the organization; relations within the organization; career development; being in the organization; organization interface with outside; factors intrinsic to the individual; and time.

(2) Individual difference moderators, including central life interest; needs; and locus of control.

(3) Felt stress, pointing out some various situations at work that cause individuals to feel varying degrees of stress. Examples of such situations are work overload, role ambiguity, and relationships at work.

(4) Individual differences as moderators of the relationship between felt stress and subsequent behaviors.

(5) Response to stress.

Work done on the specific differences of central life interest, needs, and locus of control is significant for this study, for these personality characteristics will be utilized in investigating the relationships between potentially stressful incidents, individual differences, and actual felt stress. Central life interest is expressed in terms of work- and nonwork-orientation; needs included are the need for achievement, the need for affiliation, and the need for power; the locus of control variable is identified as internal or external orientation.
The design and methodology to be used in the investigation is described in Chapter V. In the design individuals in the sample are categorized according to the different personality types and their relationship to stress experienced on the job, in personal events, and family-related incidents examined.
Introduction

Stress can arise from conditions which lead to a subjective or affective perception of potential stress. The effects of potentially stressful conditions are affected by many characteristics of the individual. Because of this there are substantial interindividual differences in what stimulus situations or incidents are likely to be perceived as stressful by specific individuals.

In this study the dependent variables consist of measures of felt stress. Independent variables include family-related, personal, and work-related incidents which are potentially stressful. Potential moderators between the incidents and felt stress are the individual personality variables described previously.

The utilization of individual differences as the moderator variables is done in accordance with the definition of a moderator variable as a quantitative or qualitative variable which improves the usefulness of a predictor by isolating subgroups of individuals who respond differently to specific stimuli. Stated somewhat differently is Stone's (1978) definition: "A moderator variable is any variable which when systematically varied 'causes' the relationship between two other variables to change."
The design to be used in this study is based on the premise that if individuals can be categorized according to one of the personality types, the process of determining the effect of potentially stressful conditions and situations will be facilitated. This premise is in accord with that of Mayes (1980, 448) who proposes that "any attempt to understand stress in organizations must ultimately focus on the features of the organization and the features of the individual within the organization. The stress felt by an individual in response to an organizational stressor is dependent on the personality of the individual."

Sample

Data were collected from a sample of 209 individuals enrolled, primarily in the M.B.A. program, at a midwestern university. Most of the subjects were simultaneously employed either full-time or part-time in a wide variety of jobs (including sales persons, middle- and lower-level managers and administrators, clerical workers, self-employed entrepreneurs, college professors, and executive officers). Places of employment were business, governmental, and educational organizations, with the largest number from the business sector. A summary of demographic data is given in Table 1, with types of employing organizations and frequencies of employment in each type being shown in Table 2.

Stressful Incidents

Prior to the administration of the questionnaires, a list of stressful incidents adapted from the Holmes and Rahe (1967) Social Readjustment Scale was prepared. This list was categorized into three groups: (a) Family-related, (b) Personal, and (c) Work-related. These categories were selected because work, although important, is not the only aspect of the total stress syndrome. Stress-related
TABLE 1
CHARACTERISTICS OF INDIVIDUALS IN THE SURVEY SAMPLE

<table>
<thead>
<tr>
<th>AGE</th>
<th>FREQUENCY</th>
<th>SEX</th>
<th>EDUCATION</th>
<th>FREQUENCY</th>
<th>EMPLOYMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not given</td>
<td>1</td>
<td>Males</td>
<td>Ph.D.</td>
<td>2</td>
<td>Full-time</td>
</tr>
<tr>
<td>61</td>
<td>1</td>
<td>129</td>
<td>J.D.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>1</td>
<td>J.D.</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>2</td>
<td>J.D.</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>1</td>
<td>Females</td>
<td>MA/MS/MBA</td>
<td>45</td>
<td>Part-time</td>
</tr>
<tr>
<td>45</td>
<td>1</td>
<td>80</td>
<td>MA/MS/MBA</td>
<td>45</td>
<td>Part-time</td>
</tr>
<tr>
<td>44</td>
<td>3</td>
<td>BA/BS/CPA</td>
<td></td>
<td>89</td>
<td>Student</td>
</tr>
<tr>
<td>39</td>
<td>2</td>
<td>3</td>
<td>AA/AIB/AS</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>1</td>
<td>3</td>
<td>AA/AIB/AS</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>4</td>
<td>3</td>
<td>AA/AIB/AS</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>2</td>
<td>3</td>
<td>3 yrs. college</td>
<td>19</td>
<td>Unemployed</td>
</tr>
<tr>
<td>35</td>
<td>3</td>
<td>3</td>
<td>3 yrs. college</td>
<td>19</td>
<td>Unemployed</td>
</tr>
<tr>
<td>34</td>
<td>5</td>
<td>3</td>
<td>2 yrs. college</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>8</td>
<td>3</td>
<td>2 yrs. college</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>8</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>10</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>6</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>7</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>15</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>13</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>9</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>20</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>19</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>20</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>8</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>14</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>12</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>11</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>11</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>1</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>3</td>
<td>1 yr. college</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

Mean = 27.029
Median = 25
Range = 16-61
<table>
<thead>
<tr>
<th>Type</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banks and other financial institutions</td>
<td>17</td>
</tr>
<tr>
<td>Utilities (including telephone companies)</td>
<td>21</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>38</td>
</tr>
<tr>
<td>Restaurants and bars</td>
<td>8</td>
</tr>
<tr>
<td>Hotels</td>
<td>1</td>
</tr>
<tr>
<td>Hospitals and doctors' offices</td>
<td>7</td>
</tr>
<tr>
<td>Farming</td>
<td>1</td>
</tr>
<tr>
<td>Academic institutions</td>
<td>19</td>
</tr>
<tr>
<td>Government agencies (city, county, state, fed.)</td>
<td>14</td>
</tr>
<tr>
<td>Insurance</td>
<td>23</td>
</tr>
<tr>
<td>Real estate</td>
<td>3</td>
</tr>
<tr>
<td>Publishing</td>
<td>2</td>
</tr>
<tr>
<td>Retail stores</td>
<td>16</td>
</tr>
<tr>
<td>Oil industry</td>
<td>3</td>
</tr>
<tr>
<td>Construction</td>
<td>2</td>
</tr>
<tr>
<td>Law firms</td>
<td>4</td>
</tr>
<tr>
<td>Accounting firms</td>
<td>4</td>
</tr>
<tr>
<td>News media</td>
<td>3</td>
</tr>
<tr>
<td>Architectural firms</td>
<td>1</td>
</tr>
<tr>
<td>Service agencies</td>
<td>6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>4</td>
</tr>
<tr>
<td>Students</td>
<td>4</td>
</tr>
<tr>
<td>Unknown</td>
<td>6</td>
</tr>
</tbody>
</table>

Mean = 7.965
Median = 7.9
effects also feed into the family and personal lives of individuals,
the pervading the whole quality of life. Panels of independent
judges related these incidents in terms of central life interest,
manifest needs, and internal-external orientation. The purpose for
sorting the incidents was two-fold: first, to eliminate those consid­
ered to be unimportant or irrelevant, and second, to place the
remaining incidents into appropriate matrices. The procedure was as
follows:

1. Manifest Needs. A panel of expert judges (five advanced doctoral
students in organizational behavior) sorted the incidents in
terms of manifest needs, i.e., need for achievement, need for
affiliation, need for power.

Instructions to the judges were:

On the cards you will find stressful incidents, classified as
(a) Family-related, (b) Personal, and (c) Work-related. Please place
these in the appropriate cells on the chart. For example, if A.1
(death of spouse) is stressful for an individual whose primary need
is the need for affiliation, put A.1 in Cell 1.2. If there are inci­
dents which you consider to be unimportant or irrelevant, please put
their numbers in the space provided.

The original list contained 56 incidents, and only two of them were
considered by the judges to be unimportant. Interestingly enough, six
of the incidents did not fit neatly into a single cell of the matrix but
were judged to be stressful for persons with different need structures.

The sorting yielded the following placements:

Family-related Incidents

Need for Achievement
3. Marital separation
9. Sex difficulties
14. Spouse begins or stops work
Need for Affiliation
1. Death of spouse
2. Divorce
3. Marital separation
4. Death of close family member
5. Marriage
6. Marital reconciliation
7. Change in health of family member
8. Pregnancy
10. Gain of new family member
11. Change in number of disagreements with spouse
12. Son or daughter leaves home
17. Christmas/other holidays

Need for Power
5. Marriage
13. Trouble with in-laws

Personal Incidents

Need for Achievement
2. Change in financial state
4. Foreclosure of mortgage or loan
5. Outstanding achievement
6. Begin or end school
7. Revision of personal habits
8. Change in schools

Need for Affiliation
3. Death of close friend
8. Change in schools
9. Change in recreation
10. Change in church activities
11. Change in social activities

Need for Power
2. Change in financial state
11. Change in social activities
12. Major mortgage or loan commitment
15. Minor infraction of the law

Work-related Incidents

Need for Achievement
1. Fired at work
2. Fear of failure
3. Fear of retirement/obsolescence
6. Lack of job security
7. Change to different line of work
8. Time pressures/deadlines  
10. Too few or too many decisions  
12. Commitment/job involvement  
14. Work overload  
16. Too little work  
19. Mistakes

Need for Affiliation  
4. Sense of being trapped  
13. Conflicts with family demands  
17. Lack of trust  
20. Poor relations with boss/peers/subordinates  
22. Poor physical working conditions  
24. Excessive travel

Need for Power  
3. Fear of retirement/obsolescence  
4. Sense of being trapped  
8. Time pressures/deadlines  
9. Role conflict/role ambiguity  
10. Too few or too many decisions  
11. Ineffective communications  
15. Change in responsibilities/too much or too little  
18. Peer pressure

Considered to be unimportant or irrelevant were:

Family-related  None

Personal  13. Change in sleeping habits
          14. Change in eating habits

Work-related  None

Opinions were mixed on the following items:

Family-related  
15. Change in living conditions  
16. Change in residence

One judge considered them to be unimportant, two placed them under Need for Achievement and two under Need for Affiliation.

Personal  
1. Personal injury or illness

Two judges placed it under Need for Achievement; all five put it under Need for Affiliation, and two under Need for Power.
Items 13 and 14 were considered irrelevant or unimportant

Work-related

Opinions were divided on the following items and judged as follows:

5. Business readjustment

Two judges placed it under Need for Achievement, two under Need for Affiliation, and one under Need for Power.

21. Change in working hours or conditions

One judge placed it under Need for Achievement, one under Need for Affiliation, one under Need for Power, and two considered it to be unimportant.

23. Long hours

Two judges placed it under Need for Achievement, two under Need for Affiliation, and one considered it unimportant.

All five judges in agreement:

Family-related
Need for Affiliation
1. Death of spouse
2. Divorce

Personal
Need for Achievement
4. Foreclosure of mortgage or loan
6. Begin or end school

Work-related
Need for Power
4. Sense of being trapped

Four judges in agreement:

Family-related
Need for Affiliation
3. Marital separation
4. Death of close family member
5. Marriage
7. Change in health of family member
12. Son or daughter leaves home

Personal
Need for Achievement
5. Outstanding achievement
7. Revision of personal habits
Need for Affiliation
3. Death of close friend
9. Change in recreation
11. Change in social activities

Need for Power
2. Fear of failure

Work-related
Need for Achievement
1. Fired at work
2. Fear of failure
12. Commitment/job involvement
16. Too little work

Need for Affiliation
13. Conflicts with family demands
17. Lack of trust
20. Poor relations with boss/peers/subordinates

Three judges in agreement:

Family-related
Need for Achievement
3. Marital separation
9. Sex difficulties
14. Spouse begins or stops work

Need for Affiliation
6. Marital reconciliation
8. Pregnancy
10. Gain of new family member
11. Change in number of disagreements with spouse
17. Christmas/other holidays

Need for Power
5. Marriage
13. Trouble with in-laws

Personal
Need for Achievement
2. Change in financial state
8. Change in schools

Need for Affiliation
8. Change in schools
10. Change in church activities

Need for Power
11. Change in social activities
12. Major mortgage or loan commitment
15. Minor infraction of the law
Work-related
Need for Achievement
3. Fear of retirement/obsolescence
6. Lack of job security
7. Change to different line of work
8. Time pressures/deadlines
10. Too few or too many decisions
14. Work overload
19. Mistakes

Need for Affiliation
22. Poor physical working conditions
24. Excessive travel

Need for Power
3. Fear of retirement/obsolescence
8. Time pressures/deadlines
9. Role conflict/role ambiguity
10. Too few or too many decisions
11. Ineffective communications
18. Peer pressure

Deleted altogether from the list to be utilized:

Family-related
15. Change in living conditions
16. Change in residence

Personal
1. Personal injury or illness
13. Change in sleeping habits
14. Change in eating habits

Work-related
5. Business readjustment
21. Change in working hours or conditions
23. Long hours

Since the criterion used to place the incidents in the appropriate cells is agreement on placement by at least three of the five judges, the items receiving less than this requirement were deleted, leaving a total of 48 incidents to be utilized in testing the hypotheses of the study. It was concluded that the remaining incidents captured potentially stressful incidents which affect individuals with different need orientations.
However, there were nine items considered by the judges to be important in more than one category, and since they could be used only if placed in a single cell, a second evaluation by the judges was necessary. The following items were considered to be important in more than one category:

<table>
<thead>
<tr>
<th>Item</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Family-related</strong></td>
<td></td>
</tr>
<tr>
<td>3. Marital separation</td>
<td>Need for Achievement &amp; for Affiliation</td>
</tr>
<tr>
<td>5. Marriage</td>
<td>Need for Affiliation &amp; for Power</td>
</tr>
<tr>
<td><strong>Personal</strong></td>
<td></td>
</tr>
<tr>
<td>2. Change in financial state</td>
<td>Need for Achievement &amp; for Power</td>
</tr>
<tr>
<td>8. Change in schools</td>
<td>Need for Achievement &amp; for Affiliation</td>
</tr>
<tr>
<td>11. Change in social activities</td>
<td>Need for Affiliation &amp; for Power</td>
</tr>
<tr>
<td><strong>Work-related</strong></td>
<td></td>
</tr>
<tr>
<td>3. Fear of retirement</td>
<td>Need for Achievement &amp; for Power</td>
</tr>
<tr>
<td>4. Sense of being trapped</td>
<td>Need for Affiliation &amp; for Power</td>
</tr>
<tr>
<td>8. Time pressures</td>
<td>Need for Achievement &amp; for Power</td>
</tr>
<tr>
<td>10. Too few/too many decisions</td>
<td>Need for Achievement &amp; for Power</td>
</tr>
</tbody>
</table>

Results of the second determination by the judges are as follows:

**Family-related**

<table>
<thead>
<tr>
<th>Item</th>
<th>Categories</th>
<th>For</th>
<th>Against</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Marital separation</td>
<td>Need for Affiliation</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>5. Marriage</td>
<td>Need for Affiliation</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

**Personal**

<table>
<thead>
<tr>
<th>Item</th>
<th>Categories</th>
<th>For</th>
<th>Against</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Change in financial state</td>
<td>Need for Achievement</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>8. Change in schools</td>
<td>Need for Achievement</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>11. Change in social activities</td>
<td>Need for Affiliation</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

**Work-related**

<table>
<thead>
<tr>
<th>Item</th>
<th>Categories</th>
<th>For</th>
<th>Against</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Fear of retirement</td>
<td>Need for Power</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4. Sense of being trapped</td>
<td>Need for Power</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>8. Time pressures</td>
<td>Need for Achievement</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>10. Too few/too many decisions</td>
<td>Need for Achievement</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>
Since at least three of the judges were in agreement on all of these items, they were retained in the list of stressful incidents.

2. Central Life Interest. A panel of five faculty members in the department of management at a university in the midwest categorized the incidents in terms of central life interest, i.e., work oriented and nonwork oriented. Instructions to the judges were the same as those for the sorting according to needs except for the column headings in the matrix. The sorting produced the following information:

<table>
<thead>
<tr>
<th>Family-related Incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work as the central life interest</strong></td>
</tr>
<tr>
<td>15. Change in living conditions</td>
</tr>
<tr>
<td>16. Change in residence</td>
</tr>
<tr>
<td>17. Christmas/other holidays</td>
</tr>
<tr>
<td><strong>Nonwork activities as the central life interest</strong></td>
</tr>
<tr>
<td>1. Death of spouse</td>
</tr>
<tr>
<td>2. Divorce</td>
</tr>
<tr>
<td>3. Marital separation</td>
</tr>
<tr>
<td>4. Death of close family member</td>
</tr>
<tr>
<td>5. Marriage</td>
</tr>
<tr>
<td>6. Marital reconciliation</td>
</tr>
<tr>
<td>7. Change in health of family member</td>
</tr>
<tr>
<td>8. Pregnancy</td>
</tr>
<tr>
<td>9. Sex difficulties</td>
</tr>
<tr>
<td>10. Gain of new family member</td>
</tr>
<tr>
<td>11. Change in number of disagreements with spouse</td>
</tr>
<tr>
<td>12. Son or daughter leaves home</td>
</tr>
<tr>
<td>13. Trouble with in-laws</td>
</tr>
<tr>
<td>14. Wife begins or stops work</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Personal Incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work as the central life interest</strong></td>
</tr>
<tr>
<td>1. Personal injury or illness</td>
</tr>
<tr>
<td>4. Foreclosure of mortgage or loan</td>
</tr>
<tr>
<td>5. Outstanding achievement</td>
</tr>
<tr>
<td>6. Begin or end school</td>
</tr>
<tr>
<td>7. Revision of personal habits</td>
</tr>
<tr>
<td>12. Major mortgage or loan commitment</td>
</tr>
</tbody>
</table>
Nonwork activities as the central life interest
2. Change in financial state
3. Death of close friend
8. Change in schools
9. Change in recreation
10. Change in church activities
11. Change in social activities
13. Change in sleeping habits
14. Change in eating habits
15. Minor infraction of the law

Work-related Incidents

Work as the central life interest
1. Fired at work
2. Fear of failure
3. Fear of retirement/obsolescence
4. Sense of being trapped
5. Business readjustment
6. Lack of job security
7. Change to different line of work
8. Time pressures/deadlines
9. Role conflict/role ambiguity
10. Too few or too many decisions
11. Ineffective communications
12. Commitment/job involvement
14. Work overload
15. Change in responsibilities/too much or too little
16. Too little work
17. Lack of trust
18. Peer pressure
19. Mistakes
20. Poor relations with boss/peers/subordinates
22. Poor physical working conditions

Nonwork activities as the central life interest
13. Conflicts with family demands
21. Change in working hours or conditions
23. Long hours
24. Excessive travel

All five judges in agreement:

Family-related
Nonwork activities as the central life interest
1. Death of spouse
2. Divorce
3. Marital separation
4. Death of close family member
7. Change in health of family member
11. Change in number of disagreements with spouse
12. Son or daughter leaves home
13. Trouble with in-laws

**Personal**

Nonwork activities as the central life interest
3. Death of close friend
10. Change in church activities
11. Change in social activities
14. Change in eating habits
15. Minor infraction of the law

Work-related

Work as the central life interest
5. Business readjustment

Four judges in agreement:

Family-related

Work as the central life interest
16. Change in residence

Nonwork activities as the central life interest
5. Marriage
6. Marital reconciliation
9. Sex difficulties
10. Gain of new family member

Personal

Work as the central life interest
1. Personal injury or illness
5. Outstanding achievement
6. Begin or end school

Nonwork activities as the central life interest
9. Change in recreation

Work-related

Work as the central life interest
2. Fear of failure
3. Fear of retirement/obsolescence
4. Sense of being trapped
6. Lack of job security
7. Change to different line of work
8. Time pressures/deadlines
9. Role conflict/role ambiguity
10. Too few or too many decisions
11. Ineffective communications
15. Change in responsibilities/too much, too little
16. Too little work
18. Peer pressure
19. Mistakes
20. Poor relations with boss/peers/subordinates
22. Poor physical working conditions

Nonwork activities as the central life interest
13. Conflicts with family demands
23. Long hours
24. Excessive travel

Three judges in agreement

Family-related

Work as the central life interest
15. Change in living conditions
17. Christmas/other holidays

Nonwork activities as the central life interest
8. Pregnancy
14. Spouse begins or stops work

Personal

Work as the central life interest
4. Foreclosure of mortgage or loan
7. Revision of personal habits
12. Major mortgage or loan commitment

Nonwork activities as the central life interest
2. Change in financial state
8. Change in schools
13. Change in sleeping habits

Work-related

Work as the central life interest
1. Fired at work
12. Commitment/job involvement
14. Work overload
17. Lack of trust

Nonwork activities as the central life interest
21. Change in working hours or conditions

No items were deleted from the list due to unimportance or irrelevance.

3. Internal-external orientations. The panel of five faculty members served as judges in placing the incidents into cells of a matrix for internal-external orientation with the same instructions as previously given with the exception of the column headings.
This exercise provided the following information:

Family-related Incidents

Internal orientation
1. Death of spouse
2. Divorce
3. Marital separation
4. Death of close family member
5. Marriage
6. Marital reconciliation
7. Change in health of family member
8. Pregnancy
9. Sex difficulties
10. Gain of new family member
11. Change in number of disagreements with spouse
14. Wife begins or stops work

External orientation
12. Son or daughter leaves home
13. Trouble with in-laws
15. Change in living conditions
16. Change in residence
17. Christmas/other holidays

Personal Incidents

Internal orientation
1. Personal injury or illness
2. Change in financial state
3. Death of close friend
4. Foreclosure of mortgage or loan
12. Major mortgage or loan commitment
15. Minor infraction of the law

External orientation
5. Outstanding achievement
6. Begin or end school
7. Revision of personal habits
8. Change in schools
9. Change in recreation
10. Change in church activities
11. Change in social activities
13. Change in sleeping habits
14. Change in eating habits

Work-related Incidents

Internal orientation
1. Fired at work
6. Lack of job security
11. Ineffective communications
13. Conflicts with family demands
19. Mistakes

External orientation
2. Fear of failure
3. Fear of retirement/obsolescence
4. Sense of being trapped
7. Change to different line of work
8. Time pressures/deadlines
9. Role conflict/role ambiguity
10. Too few or too many decisions
14. Work overload
15. Change in responsibilities/too much or too little
16. Too little work
18. Peer pressure
20. Poor relations with boss/peers/subordinates
21. Change in working hours or conditions
22. Poor physical working conditions
23. Long hours
24. Excessive travel

Items C.5 (business readjustment) and C.12 (Commitment/job involvement) were considered irrelevant by one judge; two judges placed them under internal orientation and two placed them under external orientation. A second iteration put C.5 under internal and C.12 under external, both with a 3-2 vote.

Hypotheses

Participants were asked to fill out several questionnaires as a means of investigating the hypotheses which were given in Chapter III. These are repeated here in order to coordinate them with the design and methodology of the study.

Hypothesis I (a). Persons for whom work is the central life interest will experience greater stress from critical job-related incidents than will those for whom nonwork activities are of primary importance.
Hypothesis I (b). Persons for whom nonwork activities are of primary importance will experience greater stress from critical family-related incidents than will persons for whom work is the central life interest.

Hypothesis I (c). Persons for whom nonwork activities are of primary importance will experience greater stress from critical personal incidents than will persons for whom work is the central life interest.

Hypothesis II (a). Persons who are high need achievers will experience greater stress from achievement-related incidents than will low need achievers.

Hypothesis II (b). Persons who are high in need for affiliation will experience greater stress from affiliation-related incidents than will persons who are low in need for affiliation.

Hypothesis II (c). Persons who are high in need for power will experience greater stress from power-related incidents than will persons who are low in need for power.

Hypothesis III (a). Persons who believe that they have no control over events in their lives (externals) will experience greater stress from critical work-related incidents than will persons who perceive events in their lives to be under their own control (internals).
Hypothesis III (b). Externals will experience greater stress from critical family-related incidents than will internals.

Hypothesis III (c). Externals will experience greater stress from critical personal incidents than will internals.

Instruments

(a) Attitudes toward work, primary needs, and internal-external control.

1. Central Life Interest

To determine attitude toward work, the Dubin (1956) Central Life Interest Questionnaire (Appendix B) was administered. This has been shown (Dubin, Taveggia, and Hedley, 1974) to be useful in categorizing individuals according to their interest in work or nonwork activities. Subjects are scored job-oriented if they choose at least 16 job-oriented responses or 22 job-oriented and "no-preference" alternatives with a minimum of 13 of the total responses being job-oriented. Comparable data are used to score individuals as non-job-oriented (Dubin and Champoux, 1977). The form used was developed specifically for white-collar workers, with the following introduction:

People who work in offices are obviously very important to the operations of organizations but surprisingly little is known about them.

This is a study of the manner in which a typical group of white-collar employees view their work and themselves. The conclusions from this scientific study will provide a more accurate picture of the office as a work environment.

We are asking you to cooperate in this study. The information you provide will be important in extending current scientific knowledge about reactions to work. The attached questionnaire should take only a few minutes of your time. Most questions can be answered by a simple check mark.
Your replies will be held in strict confidence. The study is purely analytical in nature. The responses will always be analyzed and reported in group statistics representing the entire sample of people included in this study.

Thank you for your interest in supporting this scientific inquiry.

Current scoring for the instrument is described in "Central Life Interests and Job Satisfaction," (Dubin and Champoux, 1977).

2. Needs

To categorize individuals according to their primary needs, the Steers and Braunstein (1976) Manifest Needs Questionnaire (Appendix C) was administered to the subjects. Mean scores were calculated for each respondent on the MNQ scale and used in the data analysis.

The MNQ was designed to measure four specific needs (achievement, affiliation, autonomy, and dominance or power), following the need theory of Murray (1938). Murray's theory, as developed by McClelland (McClelland, Atkinson, Clark, and Lowell, 1953) and Atkinson (1958) posits that motivated behavior is in large measure a function of the strength of various needs; it is three of these needs (achievement, affiliation, and power) that were used in this study.

The instrument used behaviorally based scales in a Likert seven-point format. Results of both laboratory and field studies using this scale indicate acceptable levels of convergent, discriminant, and predictive validity as well as test-retest and internal consistency reliability (Steers and Braunstein, 1976).
3. Internal-External control

To determine internal-external orientation, Rotter's (1966) Internal-External Scale of Control (Appendix D) was utilized. This scale consists of 23 items including the following:

I more strongly believe that:

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

9. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control. (External)
   b. By taking an active part in political and social affairs, the people can control world events. (Internal)

Rotter and his associates have done a number of experimental studies in this area that bolster the claim that internal versus external locus of control influences behavior. Split-half and Kuder-Richardson reliabilities of the scale cluster around .70 (Rotter, 1966).

(b) Felt Stress.

1. Taylor's Manifest Anxiety Scale

Much research on stress involves the Taylor Manifest Anxiety Scale (1953) shown in Appendix G, which is devised of items from the Minnesota Multiphasic Personality Inventory (MMPI). The questions are answered
true or false, by which the subject describes such matters as feelings of insecurity, lack of confidence, and physiological symptoms. Examples of items are "I have very few headaches" and "I am very confident of myself," with other items concerned with diarrhea, constipation, and social apprehension. The initial selection of items for this scale was made by a number of clinicians who judged them to be relevant. Taylor (1953) reported adequate internal consistency reliability (.80) for the items actually included in the scale.

2. The State-Trait Anxiety Inventory

The State-Trait Anxiety Inventory, developed by Spielberger, Gorsuch, and Lushene (1970) is a self-report instrument which measures levels of state and trait anxiety. State anxiety, A-State, involves transitory feelings of tension (stress) and apprehension that fluctuate as a function of potentially stressful situations; and A-Trait is described as individual differences in the propensity to experience stress. In the construction of the STAI, items were required to meet prescribed A-State and A-Trait validity criteria at each stage of the test development process in order to be retained (Spielberger et al, 1968). Bartsch (1976) tested the State-Trait Anxiety Battery and the State-Trait Anxiety Inventory for convergent and discriminant reliability. Both the A-Trait and A-State scales show a high degree of internal consistency (Kuder-Richardson 20 -.83 to .92). The A-State Inventory is found in Appendix E and the A-Trait in Appendix F.

3. The IPAT (Institute for Personality and Ability Testing) Anxiety Scale Questionnaire (ASQ)

The ASQ was developed as a means of getting clinical anxiety information in a rapid, objective, and standard manner (it requires only five
to ten minutes to complete). It is brief, nonstressful, applicable for chronological ages of fourteen or fifteen years upward throughout adulthood. Krug, Scheier, and Cattell (1976, 3) stated that "the scale gives an accurate appraisal of free anxiety level, supplementing clinical diagnosis, and facilitating all kinds of research or screening operations where very little diagnostic or assessment time can be spent with each examinee." Internal consistency reliability, by the Kuder-Richardson Formula 20, is .80; split-half, corrected reliability ranges from .78 to .92. This scale is shown in Appendix H.

Validity of Results

Self-report measures are sometimes criticized on the basis that there may be some inaccurate responses due to self-perceptions or the desire of the respondent to please the investigator. In defense of such measures, Scott (1968, 266) suggests that:

Though most attitude scales are composed of items that depend on subjects' introspections and self-reports, this is not an inherent limitation of the measurement models, for any of them incorporate various types of emitted or elicited responses, from physiological indicants to complex overt acts.

In some cases the data obtained by observers on subject responses can be checked by going to records such as payrolls, school files, employment files, and so forth. However, there are many properties for which such checking is very difficult as in some opinion and attitude studies which use questionnaire responses. Here it is possible to determine the stability (test-retest reliability) of the responses. In its most direct form this consists of presenting the subject with the same stimulus several times to see if the responses are the same in each case. Since the measures of stress do not correlate perfectly with each other, it is possible to get a more complete measurement of stress for each subject by using several measures.
Procedure

Prior to the implementation of the survey, a trial run was carried out using as subjects a group of students in an undergraduate organizational behavior class in order to demonstrate how the procedure would work.

After selection of the population sample to be used in the study, participants were briefed concerning the purpose of the research and its usefulness; anonymity of responses was assured. The questionnaires were administered to groups of thirty to fifty subjects during the regular class sessions under the supervision of the researcher and then turned in to the researcher. The time required to complete the entire questionnaire battery was approximately forty minutes.

Questionnaire responses were then scored, categorized, and coded according to types of stressful incidents and personality types. From the 209 questionnaires turned in two incomplete ones were eliminated, leaving a total of 207. Hypotheses to be tested and the procedure for doing so are depicted in Figures 7 through 11.

Data Analysis

Examination of data on stress in this study involves consideration of identifying stressors and their measurement, predisposing personality factors, and outcome variables of a behavioral nature.

In studies using subjective measures of stressors, each individual may perceive the situation differently. Buck (1972) used perceptual measures of stressors, self-report personality measures, and self-report job pressure. He reports that these were correlated highly so that more than 80% of the variance in job pressure was accounted for by the other
variables, although perceived stressors correlated so highly with the personality variables that adding the stressor variables only accounted for 9% of the variance for managers and 15% for workers.

The procedure to be used in analyzing the data is as follows:

<table>
<thead>
<tr>
<th>Incidents</th>
<th>Work-oriented</th>
<th>Nonwork-oriented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyp. I(a): E&gt;F</td>
<td>Family-related</td>
<td>A</td>
</tr>
<tr>
<td>Hyp. I(b): B&gt;A</td>
<td>Personal</td>
<td>C</td>
</tr>
<tr>
<td>Hyp. I(c): D&gt;C</td>
<td>Work-related</td>
<td>E</td>
</tr>
</tbody>
</table>

FIGURE 4
Central Life Interest

Hyp. II(a): A>B
Achievement-related

FIGURE 5
Need for Achievement

Hyp. II(b): C>D

FIGURE 6
Need for Affiliation

Hyp. II(c): E>F

FIGURE 7
Need for Power
Hyp. III(a): E > F

Hyp. III(b): A > B

Hyp. III(c): C > D

Family-related

| A | B |

Personal

| C | D |

Work-related

| E | F |

FIGURE 8
External-Internal Control

In this study stressors have been selected from a list of stressful incidents by a panel of independent judges who categorized them according to their relationship with the primary needs of individuals and their orientations (these being indicative of individual differences and personality types).

(a) Method

Scoring for central life interest, needs, and internal-external orientation was done according to the procedures developed for the instruments used in this study. Distribution of the subjects on each of the stress-related variables was into low and high levels of stress. Subjects were placed in the "high" category if their stress scores were in the top third of the scores for that variable. Similarly, subjects were placed in the "low" category if their score on the variable was in the bottom third. The disparity in the numbers used in the analysis stems from the fact that the cutoff points prohibited equal distribution into thirds, depending largely on range of scores, shown in Table 3. For example, on the Manifest Anxiety Scale scores on power-related inci-
scoring 2, and 4 scoring 3; therefore it was necessary to have the cut-off point at 1 and use the entire sample. A similar situation occurred with family-related incidents and work/nonwork-orientation, except that in this instance the difficulty was reversed with very small numbers in the upper and lower groups of scores. This situation was duplicated with family-related incidents and internal-external orientation.

Following this procedure a chi-square analysis was employed (Anastasi, 1976; Miller, 1970). Although chi-square does not show the strength of the relationships, it does measure the significance of differences between an observed frequency of an event or property and a theoretical frequency expected on the basis of an assumed distribution. Since frequencies are the result of counting, the chi-square test is applicable to data in discrete form such as that obtained in this study.
### Table 3
MEANS, MEDIANs, AND RANGES OF SCORES FOR INSTRUMENTS USED

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Mean</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Individual Differences</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Central Life Interest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Job-oriented</td>
<td>10.623</td>
<td>10</td>
<td>2-21</td>
</tr>
<tr>
<td>(b) Non-job-oriented</td>
<td>8.855</td>
<td>9</td>
<td>1-17</td>
</tr>
<tr>
<td>(c) Unfocused</td>
<td>13.541</td>
<td>13</td>
<td>5-23</td>
</tr>
<tr>
<td>2. Needs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Need for Achievement</td>
<td>27.111</td>
<td>27</td>
<td>14-35</td>
</tr>
<tr>
<td>(b) Need for Affiliation</td>
<td>20.333</td>
<td>20</td>
<td>14-29</td>
</tr>
<tr>
<td>(c) Need for Power</td>
<td>23.638</td>
<td>24</td>
<td>12-32</td>
</tr>
<tr>
<td>3. Internal-External</td>
<td>8.797</td>
<td>9</td>
<td>1-20</td>
</tr>
<tr>
<td><strong>II. Stress</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. A-State</td>
<td>35.3526</td>
<td>34</td>
<td>17-74</td>
</tr>
<tr>
<td>2. A-Trait</td>
<td>35.34</td>
<td>35</td>
<td>20-68</td>
</tr>
<tr>
<td>(a) Work-related</td>
<td>9.952</td>
<td>10</td>
<td>6-20</td>
</tr>
<tr>
<td>(b) Family-related</td>
<td>9.473</td>
<td>9</td>
<td>5-19</td>
</tr>
<tr>
<td>(c) Personal</td>
<td>15.884</td>
<td>16</td>
<td>9-30</td>
</tr>
<tr>
<td>(d) Achievement-related</td>
<td>14.02</td>
<td>14</td>
<td>8-27</td>
</tr>
<tr>
<td>(e) Affiliation-related</td>
<td>11.64</td>
<td>12</td>
<td>7-23</td>
</tr>
<tr>
<td>(f) Power-related</td>
<td>8.9</td>
<td>9</td>
<td>5-19</td>
</tr>
<tr>
<td>3. Manifest Anxiety</td>
<td>5.203</td>
<td>5</td>
<td>0-19</td>
</tr>
<tr>
<td>(a) Work-related</td>
<td>2.599</td>
<td>2.5</td>
<td>0-08</td>
</tr>
<tr>
<td>(b) Family-related</td>
<td>1.614</td>
<td>2</td>
<td>0-06</td>
</tr>
<tr>
<td>(c) Personal</td>
<td>.894</td>
<td>0</td>
<td>0-09</td>
</tr>
<tr>
<td>(d) Achievement-related</td>
<td>2.84</td>
<td>2</td>
<td>0-10</td>
</tr>
<tr>
<td>(e) Affiliation-related</td>
<td>1.981</td>
<td>2</td>
<td>0-09</td>
</tr>
<tr>
<td>(f) Power-related</td>
<td>.343</td>
<td>0</td>
<td>0-03</td>
</tr>
<tr>
<td>4. Self-Analysis</td>
<td>27.761</td>
<td>27</td>
<td>7-55</td>
</tr>
<tr>
<td>(a) Work-related</td>
<td>9.239</td>
<td>9</td>
<td>1-20</td>
</tr>
<tr>
<td>(b) Family-related</td>
<td>7.01</td>
<td>7</td>
<td>2-16</td>
</tr>
<tr>
<td>(c) Personal</td>
<td>11.512</td>
<td>12</td>
<td>2-28</td>
</tr>
<tr>
<td>(d) Achievement-related</td>
<td>9.624</td>
<td>9</td>
<td>2-20</td>
</tr>
<tr>
<td>(e) Affiliation-related</td>
<td>15.39</td>
<td>15</td>
<td>2-33</td>
</tr>
<tr>
<td>(f) Power-related</td>
<td>2.761</td>
<td>3</td>
<td>0-07</td>
</tr>
</tbody>
</table>
CHAPTER VI. RESULTS

Correlations between the different measures of stress used in this study are reported in Table 4 for the sample of 207 subjects with the exception of those instances involving the Self-Analysis Form. For these the Pearson correlation is based on a sample of 205 since two of the subjects did not fill out this particular questionnaire due to lack of time.

<table>
<thead>
<tr>
<th>Stress Scale</th>
<th>A-State</th>
<th>A-Trait</th>
<th>TMAS</th>
<th>IPAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-State</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-Trait</td>
<td>.6490*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TMAS</td>
<td>.5746*</td>
<td>.7075*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPAT</td>
<td>.5611*</td>
<td>.6934*</td>
<td>.6683*</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .01 level

Spielberger et al. (1970) reported correlations between the STAI A-Trait Scale and other measures of trait anxiety as shown in Table 5.
TABLE 5
CORRELATIONS BETWEEN A-TRAIT
AND OTHER STRESS MEASURES

<table>
<thead>
<tr>
<th></th>
<th>College Females (N = 126)</th>
<th>College Males (N = 80)</th>
<th>Patients (N = 66)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>IPAT</td>
<td>STAI</td>
<td>IPAT</td>
</tr>
<tr>
<td>IPAT</td>
<td>.75</td>
<td>.76</td>
<td>.79</td>
</tr>
<tr>
<td>TMAS</td>
<td>.80</td>
<td>.85</td>
<td>.73</td>
</tr>
</tbody>
</table>

*N = 112 for the correlation between the STAI and the IPAT


Spielberger et al. also reported correlations between the A-State and A-Trait scales between .44 and .55 when administered to four groups of females and between .51 and .67 for males in these samples. The consistent finding that correlations between the scales are typically higher for males than females suggests that the relationship is cleaner for males that it has been indicated in the case of females.

It might be explained that A-State would correlate highly with the other measures for, although it represents a transitory feeling of stress versus the A-Trait which is described as individual differences in the propensity to experience stress, the rank-order is the same. The high A-Trait individual would be likely to feel a high degree of stress in any potentially stressful situation although it may represent a temporary condition.
Correlations between test scores and some of the demographic variables were obtained in order to ascertain the relationship, if any, between these variables and felt stress. The sample varied in number from 203 to 207, depending upon the number of missing data.

**TABLE 6**
CORRELATIONS BETWEEN TEST SCORES AND DEMOGRAPHICS

<table>
<thead>
<tr>
<th>Factor</th>
<th>A-State</th>
<th>A-Trait</th>
<th>TMAS</th>
<th>IPAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.1292*</td>
<td>-.09</td>
<td>-.1501*</td>
<td>-.1223*</td>
</tr>
<tr>
<td>Education</td>
<td>-.0847</td>
<td>-.0619*</td>
<td>-.1379*</td>
<td>-.1899</td>
</tr>
<tr>
<td>Sex</td>
<td>.1295*</td>
<td>.116*</td>
<td>.1465*</td>
<td>.179*</td>
</tr>
</tbody>
</table>

*Significant at the .05 level.
All correlation coefficients are Pearson with the exception of those pertaining to sex; these are point-biserial.

Significant negative correlations were found between age and stress as measured by the A-State Inventory, the Manifest Anxiety Scale, and the IPAT Anxiety Scale. For education the significant correlations were negative, also, with non-significant relationships according to the A-State and IPAT scores, but with significant results from the A-Trait Inventory and the Manifest Anxiety Scale. All the correlations between sex and stress level were significant, indicating that females feel greater stress from critical incidents than do males. Results concerning age and education indicate that the instruments are measuring stress in the same way and in the same direction. They support the idea
that with increasing levels of education and age the stress felt by individuals in critical situations diminishes, perhaps because they have learned adequate responses and coping mechanisms.

Results of the data analysis in terms of the stated hypotheses are shown in Figures 12 through 41. Tables 7 through 10 summarize the results, thus identifying those hypotheses that are supported and those which are not supported. In the analysis the following decision rule was established: if at least two of the tests produced significant results, the hypothesis is accepted, but if less than two tests presented significant results, the hypothesis is not accepted.

<table>
<thead>
<tr>
<th>TABLE 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUMMARY OF RESULTS FOR A-STATE</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incidents</th>
<th>CLI</th>
<th>Needs</th>
<th>I-E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-related</td>
<td>$X^2 = 0.0896$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need for Achievement</td>
<td></td>
<td>$X^2 = 4.38^*$</td>
<td></td>
</tr>
<tr>
<td>Work-related</td>
<td></td>
<td></td>
<td>$X^2 = 3.62$</td>
</tr>
</tbody>
</table>

*Significant at the .05 level ($X^2 = 3.84$).
FIGURE 9
A-State Anxiety Inventory
Hypothesis I (a)
Work-related incidents

<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonwork-oriented</td>
<td>52</td>
<td>49</td>
</tr>
<tr>
<td>Work-oriented</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>66</td>
</tr>
</tbody>
</table>

\[X^2 = 0.0896\]
\[X^2_{.05} = 3.84\]
\[\therefore \text{Accept } H_0\]

FIGURE 10
A-Trait Anxiety Inventory
Hypothesis I (a)
Work-related incidents

<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonwork-oriented</td>
<td>49</td>
<td>65</td>
</tr>
<tr>
<td>Work-oriented</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>78</td>
</tr>
</tbody>
</table>

\[X^2 = 2.23\]
\[X^2_{.05} = 3.84\]
\[\therefore \text{Accept } H_0\]
FIGURE 11
Manifest Anxiety Scale
Hypothesis I (a)
Work-related incidents

FIGURE 12
IPAT Anxiety Scale Questionnaire
Hypothesis I (a)
Work-related incidents
<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonwork-oriented</strong></td>
<td>53</td>
<td>58</td>
</tr>
<tr>
<td><strong>Work-oriented</strong></td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>73</td>
<td>68</td>
</tr>
</tbody>
</table>

\[ X^2 = 3.39 \]
\[ X^2 .05 = 3.84 \]
\[ \therefore \text{ Accept } H_0 \]

**FIGURE 13**
A-Trait Anxiety Inventory
Hypothesis I (b)
Family-related incidents

<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonwork-oriented</strong></td>
<td>30</td>
<td>37</td>
</tr>
<tr>
<td><strong>Work-oriented</strong></td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>45</td>
<td>48</td>
</tr>
</tbody>
</table>

\[ X^2 = 1.25 \]
\[ X^2 .05 = 3.84 \]
\[ \therefore \text{ Accept } H_0 \]

**FIGURE 14**
Manifest Anxiety Scale
Hypothesis I (b)
Family-related incidents
FIGURE 15
IPAT Anxiety Scale Questionnaire
Hypothesis I (b)
Family-related incidents

FIGURE 16
A-Trait Anxiety Inventory
Hypothesis I (c)
Personal incidents
### FIGURE 17
Manifest Anxiety Scale
Hypothesis I (c)
Personal incidents

<table>
<thead>
<tr>
<th>Nonwork-oriented</th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>86</td>
<td>37</td>
</tr>
<tr>
<td>Work-oriented</td>
<td>33</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>119</td>
<td>42</td>
</tr>
</tbody>
</table>

Total = 161

\[ X^2 = 4.31 \]
\[ X^2_{.05} = 3.84 \]

Accept \( H_0 \)

### FIGURE 18
IPAT Anxiety Scale Questionnaire
Hypothesis I (c)
Personal incidents

<table>
<thead>
<tr>
<th>Nonwork-oriented</th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50</td>
<td>47</td>
</tr>
<tr>
<td>Work-oriented</td>
<td>21</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>71</td>
<td>62</td>
</tr>
</tbody>
</table>

Total = 133

\[ X^2 = .486 \]
\[ X^2_{.05} = 3.84 \]

Accept \( H_0 \)
### FIGURE 19
**A-State Anxiety Inventory**

**Hypothesis II (a)**

**Achievement-related incidents**

<table>
<thead>
<tr>
<th>Low stress</th>
<th>High stress</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low need for achievement</td>
<td>20</td>
<td>31</td>
</tr>
<tr>
<td>High need for achievement</td>
<td>48</td>
<td>35</td>
</tr>
</tbody>
</table>

\[ X^2 = 4.38 \]

\[ X^2_{.05} = 3.84 \]

\[ \therefore \text{Reject } H_0 \]

### FIGURE 20
**A-Trait Anxiety Inventory**

**Hypothesis II (a)**

**Achievement-related incidents**

<table>
<thead>
<tr>
<th>Low stress</th>
<th>High stress</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low need for achievement</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>High need for achievement</td>
<td>36</td>
<td>31</td>
</tr>
</tbody>
</table>

\[ X^2 = 6.20 \]

\[ X^2_{.05} = 3.84 \]

\[ \therefore \text{Reject } H_0 \]
<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low need for achievement</td>
<td>25</td>
<td>33</td>
</tr>
<tr>
<td>High need for achievement</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>69</td>
</tr>
</tbody>
</table>

**FIGURE 21**
Manifest Anxiety Scale
Hypothesis II (a)
Achievement-related incidents

\[ X^2 = 0.613 \]
\[ X^2 .05 = 3.84 \]
\[ \therefore \text{Accept } H_0 \]

<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low need for achievement</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td>High need for achievement</td>
<td>44</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>61</td>
</tr>
</tbody>
</table>

**FIGURE 22**
IPAT Anxiety Scale Questionnaire
Hypothesis II (a)
Achievement-related incidents

\[ X^2 = 6.09 \]
\[ X^2 .05 = 3.84 \]
\[ \therefore \text{Reject } H_0 \]
FIGURE 23
A-Trait Anxiety Inventory
Hypothesis II (b)
'Affiliation-related incidents

Low stress | High stress
---|---
Low need for affiliation | 22 | 25 | 47
High need for affiliation | 33 | 47 | 80

\[ \chi^2 = .373 \]
\[ \chi^2 .05 = 3.84 \]
\[ \therefore \text{Accept } H_0 \]

FIGURE 24
Manifest Anxiety Scale
Hypothesis II (b)
'Affiliation-related incidents

Low stress | High stress
---|---
Low need for affiliation | 22 | 18 | 40
High need for affiliation | 18 | 43 | 61

\[ \chi^2 = 6.56 \]
\[ \chi^2 .05 = 3.84 \]
\[ \therefore \text{Reject } H_0 \]
FIGURE 25
IPAT Anxiety Scale Questionnaire
Hypothesis II (b)
Affiliation-related incidents

\[ X^2 = 0.219 \]
\[ X^2_{0.05} = 3.84 \]
\[ \therefore \text{Accept } H_0 \]

FIGURE 26
A-Trait Anxiety Inventory
Hypothesis II (c)
Power-related incidents

\[ X^2 = 17.89 \]
\[ X^2_{0.05} = 3.84 \]
\[ \therefore \text{Reject } H_0 \]
### FIGURE 27
Manifest Anxiety Scale
Hypothesis II (c)
Power-related incidents

<table>
<thead>
<tr>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low need for power</td>
<td>66</td>
</tr>
<tr>
<td>High need for power</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>156</td>
</tr>
</tbody>
</table>

### FIGURE 28
IPAT Anxiety Scale Questionnaire
Hypothesis II (c)
Power-related incidents

<table>
<thead>
<tr>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low need for power</td>
<td>20</td>
</tr>
<tr>
<td>High need for power</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>51</td>
</tr>
</tbody>
</table>
### FIGURE 29
**A-State Anxiety Inventory**
- **Hypothesis III (a)**
- Work-related incidents

<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externals</td>
<td>29</td>
<td>39</td>
</tr>
<tr>
<td>Internals</td>
<td>39</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>68</td>
<td>66</td>
</tr>
</tbody>
</table>

\[ X^2 = 3.62 \]
\[ X^2_{0.05} = 3.84 \]
\[ \therefore \text{Accept } H_0 \]

### FIGURE 30
**A-Trait Anxiety Inventory**
- **Hypothesis III (a)**
- Work-related incidents

<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externals</td>
<td>26</td>
<td>46</td>
</tr>
<tr>
<td>Internals</td>
<td>41</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>67</td>
<td>78</td>
</tr>
</tbody>
</table>

\[ X^2 = 5.86 \]
\[ X^2_{0.05} = 3.84 \]
\[ \therefore \text{Reject } H_0 \]
FIGURE 31
Manifest Anxiety Scale
Hypothesis III (a)
Work-related incidents

FIGURE 32
IPAT Anxiety Scale Questionnaire
Hypothesis III (a)
Work-related incidents
### FIGURE 33
A-Trait Anxiety Inventory
Hypothesis III (b)
Family-related incidents

<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externals</td>
<td>32</td>
<td>40</td>
</tr>
<tr>
<td>Internals</td>
<td>41</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>73</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>141</td>
<td></td>
</tr>
</tbody>
</table>

\[ X^2 = 3.16 \]
\[ X^{2 \cdot .05} = 3.84 \]

... Accept \( H_0 \)

### FIGURE 34
Manifest Anxiety Scale
Hypothesis III (b)
Family-related incidents

<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externals</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td>Internals</td>
<td>27</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>93</td>
<td></td>
</tr>
</tbody>
</table>

\[ X^2 = 5.63 \]
\[ X^{2 \cdot .05} = 3.84 \]

... Reject \( H_0 \)
<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Externals</strong></td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td><strong>Internals</strong></td>
<td>40</td>
<td>22</td>
</tr>
</tbody>
</table>

**FIGURE 35**  
IPAT Anxiety Scale Questionnaire  
Hypothesis III (b)  
Family-related incidents

\[ X^2 = 8.62 \]  
\[ X^2_{.05} = 3.84 \]  
\[ \therefore \text{Reject } H_0 \]

<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Externals</strong></td>
<td>20</td>
<td>37</td>
</tr>
<tr>
<td><strong>Internals</strong></td>
<td>38</td>
<td>24</td>
</tr>
</tbody>
</table>

**FIGURE 36**  
A-Trait Anxiety Inventory  
Hypothesis III (c)  
Personal incidents

\[ X^2 = 8.16 \]  
\[ X^2_{.05} = 3.84 \]  
\[ \therefore \text{Reject } H_0 \]
<table>
<thead>
<tr>
<th></th>
<th>Low stress</th>
<th>High stress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Externals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>62</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>119</td>
<td>42</td>
</tr>
<tr>
<td><strong>Internals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>41</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>71</td>
<td>62</td>
</tr>
</tbody>
</table>

**FIGURE 37**
Manifest Anxiety Scale
Hypothesis III (c)
Personal incidents

\[ X^2 = 5.58 \]
\[ X^2_{.05} = 3.84 \]
\[ \therefore \text{Reject } H_0 \]

**FIGURE 38**
IPAT Anxiety Scale Questionnaire
Hypothesis III (c)
Personal incidents

\[ X^2 = 4.8 \]
\[ X^2_{.05} = 3.84 \]
\[ \therefore \text{Reject } H_0 \]
Only the work- and achievement-related incidents were used in this analysis because it was determined that all of the items in the A-State Inventory were related to work or the need for achievement.

Hypothesis I in the study deals with an individual's attitude toward work as it relates to felt stress in terms of work-related, family, and personal incidents. The results showed no relationship between central life interest (CLI) and stress felt from critical work-related or family-related incidents. There was a significant correlation between stress in terms of central life interest and scores on the Manifest Anxiety items which relate to personal incidents ($X^2 = 4.31$). The relationship between central life interest and family-related incidents, as determined by the A-Trait scale, approached significance ($X^2 = 3.39$). Overall, however, Hypothesis I was not supported.

The possibility exists that the results obtained are due to the fact that the Central Life Interest scale has little internal consistency. This was computed and found to be .55 (Kuder-Richardson 20 and Cronbach alpha). An alternate explanation is that there might not be, in fact, any relationship between central life interest and felt stress. One can conclude then that the results are dubious so far as the Dubin CLI instrument is concerned.
TABLE 8
SUMMARY OF RESULTS FOR A-TRAIT

<table>
<thead>
<tr>
<th>Incidents</th>
<th>CLI</th>
<th>Needs</th>
<th>I-E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-related</td>
<td>$X^2=2.23$</td>
<td></td>
<td>$X^2=5.86^*$</td>
</tr>
<tr>
<td>Family</td>
<td>$X^2=3.39$</td>
<td></td>
<td>$X^2=3.16$</td>
</tr>
<tr>
<td>Personal</td>
<td>$X^2=.139$</td>
<td></td>
<td>$X^2=8.16^*$</td>
</tr>
<tr>
<td>Need for Achievement</td>
<td></td>
<td>$X^2=6.20^*$</td>
<td></td>
</tr>
<tr>
<td>Need for Affiliation</td>
<td></td>
<td>$X^2=.373$</td>
<td></td>
</tr>
<tr>
<td>Need for Power</td>
<td></td>
<td>$X^2=17.89^*$</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level ($X^2=3.84$).

TABLE 9
SUMMARY OF RESULTS FOR THE MANIFEST ANXIETY SCALE (TMAS)

<table>
<thead>
<tr>
<th>Incidents</th>
<th>CLI</th>
<th>Needs</th>
<th>I-E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-related</td>
<td>$X^2=.003$</td>
<td></td>
<td>$X^2=.005$</td>
</tr>
<tr>
<td>Family</td>
<td>$X^2=1.25$</td>
<td></td>
<td>$X^2=5.63^*$</td>
</tr>
<tr>
<td>Personal</td>
<td>$X^2=4.31^*$</td>
<td></td>
<td>$X^2=5.58$</td>
</tr>
<tr>
<td>Need for Achievement</td>
<td></td>
<td>$X^2=.613$</td>
<td></td>
</tr>
<tr>
<td>Need for Affiliation</td>
<td></td>
<td>$X^2=6.56^*$</td>
<td></td>
</tr>
<tr>
<td>Need for Power</td>
<td></td>
<td>$X^2=12.3^*$</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level ($X^2=3.84$).
Hypothesis II received considerably greater support. Need for achievement and stress level were significantly related according to results from three of the four measures utilized in terms of achievement-related incidents (X² = 4.38, 6.20, and 6.09). The only results showing a significant relationship between a high need for affiliation and stress felt from affiliation-related incidents were those obtained from the Manifest Anxiety Scale (X² = 6.56). For individuals with a high need for power there is evidence of a high level of stress from power-related incidents as measured by the A-Trait and Manifest Anxiety Scales (X² = 17.89 and 12.3), but results fall slightly short of significance at the .05 level when measured by the IPAT Anxiety Scale (X² = 3.3). Thus, Hypothesis II (a) and II (c) were supported, but Hypothesis II (b) was not supported.

**TABLE 10**

**SUMMARY OF RESULTS FOR THE IPAT ANXIETY SCALE QUESTIONNAIRE (ASQ)**

<table>
<thead>
<tr>
<th>Incidents</th>
<th>CLI</th>
<th>Needs</th>
<th>I-E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-related</td>
<td>X²=1.33</td>
<td></td>
<td>X²=10.65*</td>
</tr>
<tr>
<td>Family</td>
<td>X²=.134</td>
<td></td>
<td>X²= 8.62*</td>
</tr>
<tr>
<td>Personal</td>
<td>X²=.486</td>
<td></td>
<td>X²= 4.80*</td>
</tr>
<tr>
<td>Need for Achievement</td>
<td>X²=6.09*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need for Affiliation</td>
<td>X²=.219</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need for Power</td>
<td>X²=3.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level (X² = 3.84).*
There seems to be a preponderance of evidence in support of Hypothesis III, which deals with internal-external orientation as it relates to stress experienced from critical work-related, family, and personal incidents. The scores from the Manifest Anxiety Scale indicated no relationship between internal-external orientation and work-related incidents ($X^2 = .005$). Scores from A-State produced a chi-square of 3.62 which approaches significance. Hypothesis III (b), which deals with family-related incidents, received support according to results from the Manifest Anxiety Scale ($X^2 = 5.63$) and the IPAT Anxiety Scale ($X^2 = 8.62$). Hypothesis III (c), dealing with personal incidents was supported by results from the A-Trait Inventory ($X^2 = 8.16$), the Manifest Anxiety Scale ($X^2 = 5.58$), and the IPAT Anxiety Scale ($X^2 = 4.8$).

Summarizing, the following hypotheses were generally supported:

Hypothesis II (a)
Hypothesis II (c)
Hypothesis III (a)
Hypothesis III (b)
Hypothesis III (c)

Those not receiving support are Hypothesis I (a), I (b), and I (c), as well as Hypothesis II (b). Results will be discussed in Chapter VII, along with their significance.
Discussion

Internal-External Orientation

Examining the data we find a number of interesting results. First, the only variable that consistently supports a significant positive relationship with stress is internal-external orientation. It corroborates Duffy et al's (1977) premise that individuals scoring high on externality are less satisfied and feel a greater degree of stress than do internals. Because this variable reappears a number of times in the analyses and in the same direction, it is highly likely that externals do, in fact, feel a higher degree of stress than do internals.

Kyriacou and Sutcliffe (1979a) employed a Likert scale format of the I-E scale and obtained a significant correlation between self-reported teacher stress and externality ($r = 0.36$, $p<.01$), i.e., those teachers who reported greater stress tended to have a belief in external control. This finding would indicate that teachers with a belief in external control may be more likely to appraise their environment as threatening and thereby are more likely to experience greater stress.

Part of the stress-inducing qualities of unpredictable events is that we have no control. There is, however, another side of control, when we do know what is going to happen and we cannot do what is necessary to meet the demand. We may know what the logical or adequate solution would be,
but we are powerless to control the people or events that would bring about the required solution (Hall and Hall, 1980).

Central Life Interest

Rapoport and Rapoport (1975) suggest that stress will result from activities of an individual unless these correspond with one's personal dispositions with regard to central life interest. This does not concur with the findings of this study which show no relationship between work- and nonwork-orientation and felt stress. Cooper (1978) found in a study of dentists that some of the subjects experienced some stress from their 'job interfering with their personal lives.' His findings relate positively with results of this study showing that as many or more nonwork-oriented individuals feel high stress levels as do work-oriented individuals.

Work-oriented individuals may actually feel less stress than nonwork-oriented individuals because they have skilled support for their stress. The stress of the nonwork-oriented individuals is debilitating; the work-oriented individuals have the mastery of language. These individuals usually can identify sources of stress, propose rules for coping, and philosophize about life. They do not take much time out from action and get back into action rather quickly.

One interesting finding that supports Dubin's results is the large number of nonwork-oriented individuals (159) in the sample, with only 48 classified as work-oriented. Over the series of tests the average number of nonwork-oriented individuals who registered high levels of stress was 84 as opposed to 74 who showed low stress.
Needs

a. Need for Achievement

With regard to primary needs, it was found that persons with a high need for achievement experienced greater stress than those individuals with a low need for achievement. This might be explained by the belief that a situation becomes stressful when an individual feels unable to deal with the demands it makes upon him or her, while at the same time feeling that he/she must. In other words, an individual is likely to feel stress from the inability to achieve, whether it be in terms of one's own or others' definition of achievement. This view is supported by the studies of managerial stress that have indicated that either "too many" or "too few" demands may create feelings of frustration, resentment and anxiety (Jaques, 1961).

One study reveals that managers who were high on job pressure reported that they worried a great deal about their ability to succeed and that they recalled for a long time with distress those occasions on which they had made a poor showing (Buck, 1972).

It would appear, therefore, that managers and others are likely to feel stress when they experience a mismatch between their need for and ability to achieve. This mismatch is a function of situational factors, e.g., organizational success criteria and the demands that are made upon those concerned, plus the nature of external motivators, such as salaries and promotions, and internal personality traits. All these considerations are permeated by our culture's emphasis on the value of high levels of individual effort.
b. Need for Affiliation

Schachter (1959) has shown how the affiliative need is strengthened under conditions of anxiety. It has been observed that executives often rely on primary group ties with one or more close associates or friends as a means of coping with the stresses of decision-making (George, 1979). From membership in a group the individual may secure some of the psychological support needed to sustain one in efforts to cope with the monumental elements of the job, such as complexity, uncertainty, risks, criticism from outsiders. Perhaps this might explain the lack of evidence from this study of a relationship between the need for affiliation and felt stress in that strong interpersonal relationships alleviate the degree of stress actually experienced by an individual.

Torrance (1961) believes that the quality of leadership and interpersonal behaviors in a group determine the way that particular stressors lead to various outcomes because they serve as linkages or forces which hold groups together. Thus effective leadership and healthy interpersonal relationships can (1) decrease the length of time between the experience of stress and action being taken, and (2) lengthen the period of continued coping in the face of prolonged stress.

For individuals to cope more effectively in stress situations, and thereby to experience less stress, it is important to maintain open channels of communication, develop more extensive, supportive, interpersonal relationships, focus on task and problem-solving activities while at the same time maintaining emotional reactivity at a low level, and to look to leaders for realistic alternative solutions to difficult problems.
c. Need for Power

According to the results from this study, the need for power seems to have a strong relationship to felt stress. The dearth of information concerning this particular variable may be explained by the fact that it is probably subsumed under two more widely discussed topics, need for achievement and leadership. Behling and Schriesheim (1976) have suggested that whether we like it or not, the need for power is the source of many behaviors. It can cause individuals to use or exploit others, but it can also be used as a positive force in increasing the personal confidence of subordinates in their ability to achieve. In accomplishing either of the two purposes, then, an individual can experience a great deal of stress.

Demographics

In addition to the correlations to investigate the hypotheses of this study, a test was made to determine the relationship between the test scores and key demographic variables. Significant negative correlations were obtained between the scores and both education and age. Cooper, in his 1978 study, sought to investigate the degree and form of association between subjectively experienced stress and certain respondent characteristics, such as age, years of administrative experience, and position. Previous research has shown that all of these variables are related to stress. Stouffer, Lumsdaine, Lumsdaine, Williams, Smith, Janies, Starr, and Cottrell (1949); Gurin, Veroff, and Feld (1960); Langner (1962); and Indik, Seashore, and Slesinger (1964) found significant relationships between age and the amount of stress experienced. Several researchers (Farber and Spence, 1956; Pronko and Leith, 1956;
Ulrich, 1957; Berkun, Bialek, Kern, and Yagi, 1962; McGrath, 1970) have shown that past experience, either in the form of familiarity with the situation due to past exposure or practice/training to cope with the situation can significantly alter the level of subjectively experienced stress and change reactions to that stress.

Conclusions and Significance

The results obtained in this study bear on two types of issues in research on stress. The first involves central life interests, primary needs, and internal-external control; the second deals with the associated prediction of individual differences in felt stress. The latter represents accounts that place emphasis on individual differences in the reaction sensitivity to critical incidents. Some statistically significant expressions of felt stress are shown to be specific to the individual difference variables, while others deny any relationship between the components.

Many researches on stress have turned up insignificant results. While the general tendency is to ignore nonsignificant results, to sweep them under the rug, the articles are still useful sources to consult by way of determining which research avenues or experimental methods are likely to prove less productive.

The scores derived from the tests used in this study will be useful for research which involves group comparisons. They may also be useful in regular assessment work by way of generating some hypotheses regarding the origin and dynamics of the stress symptomology in a particular individual.

An explanation of limitations of this study point the direction for future work in this area. Within-subjects comparisons might provide some useful information.
One possible explanation for some of the results found in this study might be the fact that the sample was composed of diverse occupational groups, thus making it difficult to separate the influence of personal characteristics from other contextual factors. Future studies might partially alleviate this problem by essentially controlling for occupational setting.

The primary purposes of this study have been met. Stress was defined and specific emphases in previous research on stress identified. Its importance as an area for study was specified in terms of the effect of stress on worker performance and its impact on total life quality. The central theme was concerned with individual differences and the nature of the relationship between an individual's personality, needs, etc., and the overall stress process. The study focused on the role of differences in terms of primary needs, work versus nonwork activities, and internal-external orientation.

Results from the investigation presented evidence to support the proposition that certain individual differences do affect felt stress, whether the precipitating incidents are work-related, family-related, or personal. The lack of significant results with regard to some of the relationships hypothesized may be due in part to the instruments utilized to measure felt stress. This would serve as a warning to researchers in the field to be very careful in choosing measures of felt stress.

The ultimate aim of identifying causes of stress and understanding how they operate is to manage stress at tolerable levels. For managers one way of dealing with stress is to pay more attention to specific individual responses to stressors during selection and training. Many
individuals make strong demands on themselves which reflect personality needs such as those for achievement, security, recognition, or self-actualization. While every individual may face many problems which must be solved, only some of these problems will be potential stressors—those problems which could bring about stress depending upon the way in which they are handled. Generally it is not assumed that, for example, particular jobs or aspects of jobs, are intrinsically stressful, despite arguments to the contrary. It really depends on how the individual perceives the demands of the job and whether or not they emerge as threatening problems. Such perceptions and actions will be strongly influenced by personality factors (Gowler and Legge, 1980). Some of the commonly shared problems could provide valuable job data in the selection and subsequent training of new employees. Thus, some stress may be avoided by improving the congruence between the known demands and perceived problems of the job and the expressed needs of the job holders.

While stress at work is a major area of concern, the debilitating effects on an individual's family and personal life must not be overlooked. Since the effect may permeate the entire quality of life, efforts toward understanding and dealing with felt stress are crucial. This study has revealed some of the underlying tendencies toward the experience of stress in potentially stressful situations. Future studies might be directed toward clarification of each of the variables utilized in this study through a more precise analysis. Also, further research into the usefulness of the instruments in establishing relationships between personality traits and stress is warranted.

It is important to note that the findings in this study with respect to relationships between stress and personal characteristics point
to the need for recognizing the multidimensionality of the stress construct. The study of stress is an area with a vast array of approaches and solutions. The issue of the role of individual differences is fascinating but as yet is largely untapped apart from interest in the Type A - Type B dichotomy. It is certainly an area for further research.

Results of this study should be of value to managers in selection, placement, and job design for situations involving job-based stress. They should provide insight to administrators whose task is, according to Hamner and Organ (1978), to know their people, to detect symptoms of stress that signal the onset of the "exhaustion" stage, and to intervene when such symptoms are in evidence.

Additionally, knowledge of the effect of individual personality characteristics on stress felt by individuals in every facet of life can be of value in determining the coping mechanisms that will alleviate the severe physiological, psychological, and/behavioral responses. This would, indeed, improve the total quality of life—at work, at home, and in personal relationships.

Now let us consider what the results of this study mean as far as the issues investigated are concerned. Although much research has been done in terms of various causes of stress, such as pressures at work, domestic problems, and personal illness, this study has specified three different types of individual differences—central life interest, primary needs, and locus of control—which may either exacerbate or diminish the actual stress felt by individuals faced with potentially stressful incidents. Evidence produced by the survey and subsequent data analysis has supported the proposition that there is a significant relationship between
certain individual differences and felt stress. There was strong support for the internal/external-stress relationship and a considerable amount for the primary needs-stress relationship, although little was shown for the relationship between central life interest and stress.

These findings have opened up a new avenue for research and discovery in the study of stress. If attitude toward work does not affect stress experienced by individuals, why not? Further studies might help to answer this important question. If the need for achievement and the need for power do increase an individual's stress level, then we might look for methods by which such a response can be alleviated. If internals can handle stressors with less severe consequences than externals, then what can be done to help those who look to luck, fate, and chance in dealing with life's problems? These are challenging issues. The ground has now been broken, revealing some as yet untapped sources of useful information in the ongoing study of the stress syndrome as it affects work and the entire quality of life.
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APPENDIX E

A - State Inventory

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then place the check on the lines below the statement that indicates how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

<table>
<thead>
<tr>
<th></th>
<th>Not At All</th>
<th>Somewhat</th>
<th>Moderately So</th>
<th>Very Much So</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I feel calm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I feel secure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I am tense</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I am regretful</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I feel at ease</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I feel upset</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I am presently worrying over possible misfortunes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I feel rested</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I feel anxious</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>I feel comfortable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>I feel self-confident</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>I feel nervous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>I am jittery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>I feel &quot;high strung&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>I am relaxed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>I feel content</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>I am worried</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>I feel over-excited and &quot;rattled&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>I feel joyful</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>I feel pleasant</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix F

A - Trait Inventory

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then place the check on the lines below the statement that indicates how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

21. I feel pleasant
22. I tire quickly
23. I feel like crying
24. I wish I could be as happy as others seem to be
25. I am losing out on things because I can't make up my mind soon enough
26. I feel rested
27. I am "calm, cool, and collected"
28. I feel that difficulties are piling up so that I cannot overcome them
29. I worry too much over something that really doesn't matter
30. I am happy
31. I am inclined to take things hard
32. I lack self-confidence
33. I feel secure
34. I try to avoid facing a crisis or difficulty
35. I feel blue
36. I am content
37. Some unimportant thought runs through my mind and bothers me
38. I take disappointments so keenly that I can't put them out of my mind
39. I am a steady person
40. I get in a state of tension or turmoil as I think over my recent concerns and interests
APPENDIX G

Manifest Anxiety Scale

Instructions. Below are listed 27 items. Please circle those items which describe your own feelings. There are no correct or incorrect answers. Please respond to all statements frankly. Your responses will be kept in complete confidence.

1. I am often sick at my stomach.
2. I am about as nervous as other people.
3. I work under a great deal of strain.
4. I blush as often as others.
5. I have diarrhea ("the runs") once a month or more.
6. I worry quite a bit over possible troubles.
7. When embarrassed I often break out in a sweat which is very annoying.
8. I do not often notice my heart pounding and I am seldom short of breath.
9. Often my bowels don't move for several days at a time.
10. At times I lose sleep over worry.
11. My sleep is restless and disturbed.
12. I often dream about things I don't like to tell other people.
13. My feelings are hurt easier than most people.
14. I often find myself worrying about something.
15. I wish I could be as happy as others.
16. I feel anxious about something or someone almost all of the time.
17. At times I am so restless that I cannot sit in a chair for very long.
18. I have often felt that I faced so many difficulties I could not overcome them.
19. At times I have been worried beyond reason about something that really did not matter.
20. I do not have as many fears as my friends.
21. I am more self-conscious than most people.
22. I am a very nervous person.
23. Life is often a strain for me.
24. I am not at all confident of myself.
25. At times I feel that I am going to crack up.
26. I don't like to face a difficulty or make an important decision.
27. I am very confident of myself.
APPENDIX H

IPAT Anxiety Scale Questionnaire

INSTRUCTIONS: Below you will find forty questions, dealing with difficulties that most people experience at one time or another. Please check Yes, No, etc., to each, frankly and truthfully, to describe any problems you may have. As you see, each inquiry is actually put in the form of a sentence. Please put a check on one of the lines to show how it applies to you. Be sure to answer every question. Your answers will be entirely confidential. Do not spend time pondering. Answer each immediately, the way you want to at this moment (not last week, or usually).

1. I find that my interests, in people and amusements, tend to change fairly rapidly.
   True In between False

2. If people think poorly of me I can still go on quite serenely in my own mind.
   True In between False

3. I like to wait till I am sure that what I am saying is correct, before I put forward an argument.
   Yes In between No

4. I am inclined to let my actions get swayed by feelings of jealousy.
   Sometimes Seldom Never

5. If I had my life to live over again I would:
   (A) plan very differently, (B) want it the same.
   A In between B

6. I admire my parents in all important matters.
   Yes In between No
7. I find it hard to "take 'no' for an answer", even when I know what I ask is impossible.

8. I doubt the honesty of people who are more friendly than I would naturally expect them to be.

9. In demanding and enforcing obedience my parents (or guardians) were:
   (A) always very reasonable, (B) often unreasonable.

10. I need my friends more than they seem to need me.

11. I feel sure that I could "pull myself together" to deal with an emergency.

12. As a child I was afraid of the dark.

13. People sometimes tell me that I show excitement in voice and manner too obviously.

14. If people take advantage of my friendliness I: (A) soon forget and forgive, (B) resent it and hold it against them.

15. I find myself upset rather than helped by the kind of personal criticism that many people make.

16. Often I get angry with people too quickly.
17. I feel restless as if I want something but do not know what.

18. I sometimes doubt whether people I am talking to are really interested in what I am saying.

19. I have always been free from any vague feelings of ill-health, such as obscure pains, digestive upsets, awareness of heart action, etc.

20. In discussion with some people, I get so annoyed that I can hardly trust myself to speak.

21. Through getting tense I use up more energy than most people in getting things done.

22. I make a point of not being absent-minded or forgetful of details.

23. However difficult and unpleasant the obstacles, I always stick to my original intentions.

24. I tend to get over-excited and "rattled" in upsetting situations.

25. I occasionally have vivid dreams that disturb my sleep.

26. I always have enough energy when faced with difficulties.
27. I sometimes feel compelled to count things for no particular purpose.  
   True  Uncertain  False

28. Most people are a little queer mentally, though they do not like to admit it.  
   True  Uncertain  False

29. If I make an awkward social mistake I can soon forget it.  
   Yes  In between  No

30. I feel grouchy and just do not want to see people: (A) occasionally, (B) rather often.  
   A  In between  B

31. I am brought almost to tears by having things go wrong.  
   Never  rarely  sometimes

32. In the midst of social groups I am nevertheless sometimes overcome by feelings of loneliness and worthlessness.  
   Yes  In between  No

33. I wake in the night and, through worry, have some difficulty in sleeping again.  
   Often  sometimes  Never

34. My spirits generally stay high no matter how many troubles I meet.  
   Yes  In between  No

35. I sometimes get feelings of guilt or remorse over quite small matters.  
   Yes  In between  No

36. My nerves get on edge so that certain sounds, e.g., a screechy hinge, are unbearable and give me the shivers.  
   Sometimes  Never

37. If something badly upsets me I generally calm down again quite quickly.  
   True  Uncertain  False
38. I tend to tremble or perspire when I think of a difficult task ahead.  Yes  In between  No

39. I usually fall asleep quickly, in a few minutes, when I go to bed.  Yes  In between  No

40. I sometimes get in a state of tension or turmoil as I think over my recent concerns and interests.  True  Uncertain  False
APPENDIX I

Demographics

1. Name ________________________________________________
2. Age ________________________________________________
3. Sex ________________________________________________
4. Education ___________________________________________
5. Type of employment (full or part-time) ___________________
6. Organization _________________________________________
7. Time with the organization ______________________________
8. Position _____________________________________________
9. Managerial experience _________________________________
10. Other job experience ___________________________________
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