THE INDIVIDUAL, THE WORK ENVIRONMENT, THE FAMILY ENVIRONMENT, AND STRESS: AN INVESTIGATION OF SELECTED VARIABLES WITH IMPLICATIONS FOR PERSONNEL MANAGEMENT

DISSERTATION

Presented to the Graduate Council of the North Texas State University in Partial Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

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Denton, Texas

December, 1980

The application of the systems concept to the individual, the family, and the organization predicts that these systems will interact in such a manner that events in one system will correlate with events in the other systems. The purpose of this study is to investigate one area of system interaction, stress creation and stress outcomes.

A search of the literature revealed little empirical research pertaining to the interaction between the family environment and the work environment. However, from the available literature a model of work-family interaction was developed. The model hypothesized specific relationships between variables within and between the family environment, the work environment, type A behavior, job outcomes of perceived productivity and satisfaction, and the stress outcome of illness.

To test the hypothesized relationships of the model a questionnaire was developed and distributed via
intercompany mail to mid-level managers of the customer service division of an international airline. Returned usable questionnaires (N = 89) were scored and analyzed using appropriate statistical techniques.

The data gathered for this study were used to test the relationships between the variables of the work-family model. The model was decomposed into three separate outcome models, one for perceived job productivity, one for job satisfaction, and one for illness. The hypotheses of the study were then applied to each model and statistically tested.

Following the hypotheses tests, correlations between variables were analyzed. Correlations were analyzed by the outcomes of job performance, job satisfaction, and illness. Each analysis resulted in models which, although similar to the models resulting from the tests of the hypotheses, indicated relationships not previously hypothesized.

The analysis of the data collected indicates that the model for job productivity is a complex of interrelationships among both the family environment and the work environment. The family environment also showed a multiple linear relationship between job productivity and type A behavior, marital stress, marital helping behavior, and family stressors. Correlation analysis indicated a weak
relationship between marital helping behavior and family stressors.

For the population of this study it can be concluded that

1. From the work environment, work group support shows the greatest degree of correlation with job productivity.

2. Marital stress indicates the greatest degree of correlation with job productivity from the family environment.

3. For the outcome of job productivity there are low but significant relationships between work stressors, family stressors, marital helping behavior, and occupational stress.

4. Generally, the individual who perceives high job productivity is a type A personality, perceives high work group support, and perceives high marital stress.

The results of the analysis of the data of this study further indicate a relationship between job satisfaction and the family environment. Correlations indicated a significant relationship between type A behavior and marital stress. Also indicated by correlation analysis were relationships between work stressors, family stressors, and marital helping behavior. However, the variables of the family environment were not significantly related to job satisfaction to be included in the model.
The measure for illness (days missed due to illness) showed no multiple relationship with either the family environment or the work environment. Tests of the hypotheses did indicate a significant correlation between illness and marital stress. Furthermore, correlation analysis indicated a relationship between illness and work group support.
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CHAPTER I

ESSENTIAL ELEMENTS OF THE STUDY

Initial Considerations

Personnel management is, by one definition, "that function of all enterprises which provides for the effective utilization of human resources to achieve both the objectives of the enterprise and the satisfaction and development of the employee" (6). The activities of the personnel professional to maximize an organization's human resources are numerous and varied. Included in the activities are research into the understanding of work behavior, development of employees to achieve the greatest degree of efficiency, monitoring the work force to achieve the highest level of employee utilization and satisfaction, and controlling the cost of an organization's human resources. Underlying all of the above (and other) activities of the personnel professional must be a clear theoretical conception of work behavior. Without a sound theoretical knowledge of work behavior, personnel policies and practices will achieve neither the goals of the organization nor the goals of the employees.

The study of work-related behavior has taken many diverse forms, often concentrating on one or more specific
variables thought to influence the cognitive or behavioral processes of the individual in the work environment. Recently the most popular approach to the study of the individual at work has employed the concept of expectancy as its underlying theoretical basis (21, pp. 703-715). This theoretical concept, along with its many variations, combines a number of distinct, specific variables into what may be viewed as a system of individual perceptions influencing behavior. Thus, expectancy theory has allowed researchers to view the individual as a dynamic and interacting system composed of perceptions such as instrumentality, valence, locus of control, equity, etc. This approach to the study of work behavior has added immeasurably to the understanding of the individual in the work environment. Yet, studies employing expectancy theory have often resulted in confusing or contradictory results (3, 17, 20, 21).

There are undoubtedly many reasons why research on expectancy theory has not developed into a true comprehensive theory of work behavior. Differences in working definitions, methodology, and instrumentation have undoubtedly contributed some confusion. It is also possible that all of the major variables have not been identified or that the relative importance of a specific variable may vary over time or between individuals. Yet another reason may be the general approach to the study of work
behavior. Most research into work behavior ignores or minimizes the influence of the nonwork environment; it is often assumed that all variances of work behavior can be accounted for by factors associated entirely within the work environment. It seems more plausible, however, that the individual in the work environment is influenced to some degree by involvement in other social systems, e.g., the family. The lack of research combining the various systems of work, family, recreation, and others may have led to a gap in understanding work behavior.

Need for Intersystems Research

In order to gain a better understanding of the system of perceptions known as the individual at the work place, it would appear to be necessary to understand how the individual interfaces with the family system and how this interface influences the individual at the work place. Rapoport and Rapoport note that "The relations between work and family life have seldom been studied explicitly, for specialists in family sociology, kinship, industrial sociology and occupational psychology have tended to treat each of these areas as a relatively closed subsystem" (17, p. 382).

The tendency to specialize in specific fields of study is perhaps the primary reason for the lack of research on family-work relations. However, Ridley also
notes that there "... are no consistently held sets of concepts and assumptions ... from which an integrative type theory building can begin" (19, p. 229). In addition, Renshaw states that "there is little official recognition of the family world from the organizations perspective" and that "the work-family boundary has not been considered a legitimate area of concern for organizations, save for one issue, the 'fit' of an executive's wife in the company" (18, p. 146).

Perhaps, then, specialization, lack of theory, and organizational indifference have resulted in little emphasis, and even less research, on the work-family relationship. However, a systems approach suggests that some degree of association does exist between systems. It would therefore appear to be necessary to study the relationships between work and family in order to more completely understand and theorize about the individual at work. A more complete theory of work behavior should, in turn, lead to more informed personnel decision-making and better utilization of human resources.

One area which would appear to be productive concerns stress and the family-work interface. It has been estimated that stress costs approximately $75 to $90 billion annually and is associated with mental health problems, accidents, absenteeism, turnover, job satisfaction, and productivity (9). Yet the majority of research dealing
with work stress and stress outcomes has seldom even considered the impact of the nonwork environment. A systems approach, however, suggests that the nonwork environment will affect work behavior. The personnel professional needs to understand the interrelationships between the family, the work place, and stress.

Questions of interest would be the role the family assumes in the creation and reduction of stress in the individual, the effects that family-related stress has on the individual at work, and whether family and work stress is cumulative or the individual distinguishes between the two areas of stress. If the family does indicate a significant relationship with work behavior, then perhaps the family is of legitimate concern to the organization.

Skidmore and Skidmore note that "A worker who is emotionally distraught at home may be emotionally and physically hampered at work, with his job performance affected negatively" (21, p. 136). Poor performance, for any reason, would seem to be of concern to the organization. Yet what can, or should, the organization do? A few companies have begun to realize that the family might affect work behavior and have begun offering marriage and family counseling on a voluntary basis (4, 21). Marriage and family counseling may provide assistance to the employees experiencing serious trouble and who are willing to seek help, but what of the rest of the work force? It may be
possible that awareness of the work-family relationship, combined with stress management, could contribute to the well-being of the work force.

Purpose of the Study

The purpose of this study is to explore an area of human behavior which affects the business world in ways that are little known and seldom researched. The behavior under investigation concerns that of individual stress and the overlapping systems of the family and the organization.

Initial investigation into the overlapping of work and family life provided little empirical research and/or theory. However, by assuming a systems perspective it becomes apparent that the three systems of the individual, the organization, and the family can, and in fact do, interact to varying degrees. The individual can be a member of either, or both, the family system and the work system at different times. Any one individual may then be perceived as overlapping the family and work systems with interaction ranging from almost complete separation of family from work to almost complete integration of work and family. The former may be exemplified by the stereotypic bureaucratic employee who works only the required number of hours but cares little about the job and has no organizational commitment. The latter may be exemplified by the small farm in which all members of the family are
highly involved in the goals of the organization, or perhaps by the workaholic who relegates the family to a supporting role and is totally subservient to the organization.

Moving away from either extreme, it would seem more likely that the typical employee exhibits varying degrees of work system and family system overlap. Where this overlap exists there is the potential for stress as the goals of one system conflict with the goals of another, placing the individual in a double-bind situation. This study attempts to investigate areas of stress development and stress reduction in both the family system and the work system and the relationships between these two systems. In addition, the effects of stress on the individual at work will also be studied, particularly as to the extent family-induced stress accounts for variations in work behavior.

Scope and Limitations

It is the intent of this study to investigate stress as only one aspect of the interactions involved between work systems and family systems. There are undoubtedly many areas of intersystems relationships which are worthy of empirical investigation; however, the creation and reduction of stress between these systems appears to be an area of significant importance which lacks both theoretical and empirical investigation.
This research will be concerned with a restricted number of variables relating to the creation and reduction of stress in the family system and in the work system and to selected stress outcomes. It is impossible to study all aspects of the work environment, the family, and stress. Therefore, eight major variables (plus demographics) which are relevant to the study have been chosen for investigation. Investigation of additional variables would have required substantially more subject involvement and would have resulted in the compounded problems of decreased response and rater fatigue. The exact nature and type of variables included are discussed at length in Chapter II.

The scope of this study is additionally limited to middle managers in one specific organization. Middle managers were chosen as the population for study in order to increase the knowledge base of this employee group. A single organization was used to help control for compounding environmental variables. Conclusions reached are therefore limited to the population studied and not generalized to all workers. Further limitations concern methodological procedures inherent in social-psychological research and include factors such as the nature of the data collection forms, demographic and psychological makeup of the population, and method of data collection. For instance, no questionnaire has been designed which
gathers perfect information, is perfectly reliable, or is completely valid. Additionally, there is always the possibility of response bias and non-response bias either from the sample or the method of collecting data.

The questionnaire developed for this study is comprised of eight separate instruments which have been shown to have an acceptable \( r = .6 \) or better reliability in previous research. However, few if any psychological assessment instruments are completely reliable or have demonstrated validity. Limitations of the instruments will be noted where applicable in Chapter III.

Theoretical Foundations

The systems concept has been used for a number of years to conceptualize, theorize, or simply explain many complex physical and social institutions and events.

Three definitions of a system provide the groundwork for the analysis used in this paper.

1. \( \ldots \) an organized, unitary whole composed of two or more interdependent parts, components, or subsystems and delineated by identifiable boundaries from its environmental suprasystem (11, p. 101).
2. \( \ldots \) as a set of elements standing in interrelation among themselves and with the environment (2, p. 13).
3. \( \ldots \) a set of different things or parts that meet two requirements: \( \ldots \) parts are directly or indirectly related to one another in a network of reciprocal causal effects, and second, each component part is related to one or more of the other parts of the set in a reasonably stable way during any particular period of time (10, p. 23).
From these definitions, systems are noted to have certain characteristics in common. First, systems are composed of parts, or subsystems, organized into a whole. Second, the parts are interdependent, interactive, and dynamic both within the system and with its environment. Third, these interrelationships are stable over a given period of time; and, fourth, there is an identifiable boundary between systems. Having defined what a system is composed of, it is now possible to apply the systems concept to the individual, the family, and the organization and to discuss how these three systems may overlap or interface with one another.

The Individual at the Work Place

E. E. Lawler (14, pp. 153-164) has developed a conceptual model of work behavior which implies that the individual is a complex system of perceptions. Lawler's model is an extension and refinement of the work of Vroom (23) and follows an expectancy theory developed by Porter and Lawler in 1968 (16). Lawler's current model goes beyond what is normally included in expectancy theory and combines the best empirically tested work behavior theories into a comprehensive system of perceptions and behaviors.
Lawler's Expectancy Model

Lawler postulates that a number of variables affect motivation or behavior and include a complex feedback arrangement within the model. The first major variable which determines motivation or behavior is $E \rightarrow P$, or the subjective probability that a particular level of effort will result in a particular level of performance (see Figure 1). This variable is influenced by two factors: (1) the subject's self-esteem (Box 3), that is, his general beliefs about his ability to cope with and control his environment (1, 20); and (2) his previous personal and observed experience in similar and identical stimulus situations (Box 4). The model also indicates that a person's self-esteem is influenced by his job performance (feedback loop a). In general the higher the person rates his self-esteem and the more he has been able to perform effectively in similar situations, the higher will be his $E \rightarrow P$ subjective probability.

The second major factor affecting motivation is the $[(P \rightarrow O) \ (V)]$ equation in Box 2. Box 2 represents a person's perception that performance ($P$) leads to outcomes ($O$), and the valence ($V$) of that outcome. The $[(P \rightarrow O) \ (V)]$ variable is then modified in a number of ways. One modification is an individual difference factor that Rotter and others (15, 21) have referred to as a belief in internal versus external control (Box 6). According
Fig. 1--The motivation model (14, p. 108)
to this view, some people see the world in terms of them acting upon the world (internal control), while others are acted upon by the world (external control). The person with internal control will feel more that performance leads to outcomes than will an externally controlled person.

Additionally the $P \rightarrow O$ probability will be influenced by past experiences in similar situations (Box 4) and to some degree by the $E \rightarrow P$ variable. Feedback loop $b$ (from rewards to Box 2) indicates that learning can occur to again modify the $P \rightarrow O$ probability (14, p. 71).

The valence to perform ($V$) will also be modified by the perceived fairness of the input-outcome equity balance (Box 7). Equity is based on the work of Adams (1) and predicts that an imbalance will cause an individual to behave in a manner to attempt to regain the input-output balance. The valence will also be affected by the degree to which the outcome is perceived to satisfy needs (Box 5). The argument is that the more an outcome is perceived to be capable of satisfying one or more needs, the more valued it will be (14).

Once the effort to perform has been established, two additional constraints will affect the actual performance level. These constraints are perceived ability (Box 10) and the individual problem-solving approach (Box 8). Ability is shown to combine multiplicatively to determine performance. If the ability is zero, there will be no
performance (13). The perception of problem-solving is learned through previous experience and is somewhat similar to Hull's (8) habit strength concept.

The Individual as a System of Perceptions

Lawler's model can be viewed as a dynamic, cognitive, open system of perceptions which can give greater insight into motivation and behavior. Personnel administrators can use such models in the development of policies and practices concerned with the motivation of employees and the organization's reward structure. Consideration of employees as individuals with diverse needs and motives can lead to new concepts in personnel practice, greater utilization of human resources, and more satisfied employees. One such practice that has emerged from theories such as Lawler's is cafeteria compensation, which allows each employee to choose among specific organizational rewards (6).

It must be noted that Lawler's model is based upon the perceptions an individual has about the environment and how these perceptions may be created or altered. Yet, in this open system Lawler has omitted many potentially influential factors or variables, including only those which have been empirically researched in the work environment.
The Work System and the Family System

The individual, as a system of perceptions, exists in an environment which is composed of many social systems. Some of the social systems with which the individual might interact would include the economic system, the family system, the religious system, the legal system, the recreational system, and many more. The focus of this research is upon the individual and the two systems of the family and work. The family and work systems are discussed below.

The Work Environment System

The environment in which an individual works has been described and analyzed as a system by Koontz and O'Donnell (12, p. 44), Stoner (22, pp. 52-54), and others. An organization fits well into the definition of a system; it is composed of many parts (individuals and groups) which are interdependent, interactive, dynamic, and yet stable over a given period of time with an identifiable boundary.

The environment in which an individual works is a subsystem of the organization system. This subsystem is composed of those immediate individuals whose interaction is relatively frequent and is bounded by other subsystems within the organization. The individual can then be viewed as a system of perceptions within a subsystem of
the organization. The systems concept allows one to assume that events and happenings in any part of the system, from the individual to the work group to the total organization, will affect all other parts of the system. These effects may be very minor or quite pronounced. The systems concept also implies that organizational systems interact with other systems. This boundary spanning (22) is quite evident when an organization attempts to sell its products or services, raise capital for various reasons, or pursue governmental contracts. Less obvious would be the effects of the individual within the organization as that individual interacts with other social systems such as the family, recreation groups, and religious groups.

**The Family System**

The family is composed of individuals who interact on a fairly continuous basis. These individuals are organized into a unit or whole (the core family), interdependent and interactive with each other and their environment. Additionally the relationships between the individuals of the family are reasonably stable, and identifiable boundaries exist between the family and other systems. Also included in the family system would be a growing population of individuals who are divorced, remarried, widowed, or cohabiting. These individuals may be considered parts of extended family systems and
may be influenced by or belong to more than one family system. The family fits well with the definition of a system already presented, and in fact the systems concept has previously been applied to the study of the family (5, 7, 10).

Kantor and Lehr note that "family systems, like all social systems, are organizationally complex, open, adoptive, and information-processing systems" (10, p. 10). Yet, as has already been shown, at least one member of the family system (the working individual) can also be considered a complex system. The family system can actually be viewed as three distinct subsystems:

1. The family unit subsystem composed of all core family members. The core family is those individuals whose interaction is relatively frequent and intense. The core family might typically be the two spouses and children living at home.
2. The interpersonal subsystem of any two or more family members.
3. The personal system of the individual (10, p. 23).

The family can be viewed as a system, yet this system does not exist in isolation and will interact with other systems. Interaction may occur with the core family as a unit, such as in religious and/or recreational activities, or interaction may occur when one individual brings environmental influences into the family relationships. Since social systems are open systems, it is also likely that events occurring within the family will influence extra-family systems, such as the work system.
Systems Overlap: Individual, Family, and Work

For the purpose of this study, three separate, yet interdependent, systems have been identified: the individual, the organization, and the family. The individual is assumed to be a system of perceptions which will alternately also be a subsystem of either the family system or the work system (Figure 2). It is further assumed that, since all three of these systems are open systems, there will be some degree of interaction among them.

![Venn Diagram of Individual, Family, and Work](image)

Fig. 2--Overlap of individual, family, and work

Although the work and family systems are usually physically separate, the individual is shown as perceptually overlapping the two systems. This area of overlap
then becomes the potential area of stress between the family, the individual, and the work system. Stress is created when the goals of the systems conflict and place the individual in such a position that behavior toward satisfying one system's goals is counterproductive toward achieving goals in the other system. Additionally the individual will have a set of goals and needs which might also conflict with either the family system or the work system or both.

Stress may, however, not be the only result of the overlapping of the individual, the work, and the family. It might also be possible that the overlapping of these three systems may be beneficial or supportive of each other, particularly where the goals of all three systems are complementary. Complementary goals might be exemplified in a situation where both the individual and the family are goal-directed toward achieving power and prestige, and the organization provides the opportunity to achieve these goals. It might also be that stressful perceptions developed in the individual while in one system might be moderated or reduced by helping behaviors or support in the other system.

For the personnel professional the concepts of social systems and systems overlap provide a micro and a macro perspective to work behavior. By being aware of, and accounting for, the influences of systems other than
the work place, it seems likely that an organization's human resources can be better utilized.

Definitions of Variables

The preceding discussion has introduced a variety of concepts which have not, to this point, been defined. Stress, for example, is a complex phenomenon involving both physiological and psychological factors and can be defined in a variety of ways. This research employs ten variables other than demographics. The definitions for the variables of this study are presented below.

**Family stressors**: Actual events occurring within the family environment that are potentially noxious or arousing to the individual. Such events include death of a spouse, marriage, divorce, change in residence, etc.

**Illness**: The number of work days missed due to illnesses of any kind during the previous six months. Illness is thus defined from an organization's viewpoint in that absences are generally dysfunctional to the organization.

**Job productivity**: An individual's self-perception of his own performance on eight general dimensions of management activity, namely, planning, investigating, coordinating, evaluating, supervising, staffing, negotiating, and representing.
Job satisfaction: The degree of satisfaction an individual receives from the work environment. Five factors of the work environment are measured: supervision, people, work, pay, and promotion.

Marital helping behavior: An individual's perception of the degree of informal spousal help in coping with work-related stress.

Marital stress: An indication of the climate of the family environment, as indicated by the perception of the amount of arguing behavior present in the family system. Arguing behavior is assumed to indicate conditions of stress.

Occupational stress: There are many types of occupational stress in any given work environment. For this study occupational stress is the amount of role conflict and role ambiguity perceived by the individual in his or her job.

Type A behavior: An individual difference factor. Type A behavior is indicative of an individual's susceptibility to stress-related illnesses. The type A person is characterized as highly competitive, achievement oriented, aggressive, impatient, etc.

Work group support: An indication of the work environment pertaining to the degree of positive reinforcement received from the work group. Work group support is an individual's perception of work environment factors
such as the degree of personal interest, friendly atmosphere, praise and recognition, etc.

Work stressors: Actual events occurring in the work environment that are potentially noxious or arousing to the individual. Such events include changes in type of work, changes in work hours, promotions, demotions, etc.

Each of the above variables is further explicitly defined by the instruments used in this research study. Further discussion of the variables is found in Chapter III; the research questionnaire is found in Appendix B (pp. 173-186).

Hypotheses

From the preceding discussion on the theoretical foundations of this study, the following hypotheses have been formulated for empirical investigation.

Hypothesis 1. A relationship exists between the dependent variables of job productivity, job satisfaction, and illness and the independent variables of work stressors, group support, and type A behavior.

Hypothesis 2. A relationship exists between the dependent variables of job productivity, job satisfaction, and illness and the independent variables of family stressors, marital helping behavior, marital stress, and type A behavior.
Hypothesis 3. A relationship exists between occupational stress and marital stress.

Hypothesis 4. A relationship exists between work group support and marital helping behavior.

Hypothesis 5. Occupational stress will account for a greater portion of variance in job productivity, job satisfaction, and illness than will marital stress.

Hypothesis 6. A relationship exists between work stressors, work group support, and occupational stress.

Hypothesis 7. A relationship exists between family stressors, marital helping behavior, and marital stress.

The procedures to test the above hypotheses are presented in Chapter III, Methods and Procedures. The following chapter discusses the empirical literature of the individual, the family, and work-family stress. From this literature a model is developed showing hypothetical relationships between the variables of this study.

Plan of the Dissertation

The dissertation is arranged in an order that is both logical and traditional in an academic document of this type. Included in this dissertation are the relevant research and theoretical foundations, methodology, results, discussion, and conclusions.
Chapter I, Essential Elements of the Study, has presented a systems approach to the study of work behavior and demonstrated how the three systems of the individual, the family, and the organization overlap. Following the systems approach the hypotheses to be investigated in this study are noted.

Chapter II, Literature Review and Proposed Model, builds upon and continues the theme of Chapter I by presenting first the empirical literature relevant to the study. From this literature a model is then developed and discussed. Included in the discussion are possible implications for personnel administration.

Chapter III, Methods and Procedures, details the exact methodology employed to test the proposed model presented in Chapter II. This chapter includes the methodology, the questionnaire, questionnaire reliability, and sample population characteristics.

Chapter IV, Tests of the Hypotheses, tests the hypotheses of this study relevant to the model discussed in Chapter II. The original model developed for this study is decomposed into four separate models and the appropriate hypotheses for each model are tested. The first model tested is composed of the structural independent variables associated with the work environment, the family environment, and the individual difference factor of type A behavior. The hypotheses of the
Structural independent variables (hypotheses three, four, six, and seven) are tested and discussed.

The remaining three models test the relationships between the structural independent variables and the outcome variables of job productivity, job satisfaction, and illness. Hypotheses one, two, and five are then applied to each model and appropriate tests are made and discussed.

Chapter V, Results and Analysis of Correlations, presents the correlations between the major variables of the study. Correlations are analyzed by outcomes, e.g., job productivity, job satisfaction, and illness. The correlations associated with each outcome are discussed and three outcome models are developed and presented from the correlation analysis.

Chapter VI, Summary, Conclusions, and Recommendations, briefly reviews the study in summary fashion. The results of the analyses found in Chapter IV and Chapter V are then integrated into the final three outcome models of this study. Each outcome model is briefly discussed and conclusions for each model are presented. The conclusions for each model additionally present implications for personnel management. Recommendations are then made for future studies.
Summary

A number of authors (10, 17, 18, 19) have called for increased investigation into the dynamics of the interaction between the family and work. By employing the systems concept to the individual at work, the organization, and the family, it appears that the potential exists for interaction and conflict between the three systems of the individual, the organization, and the family. It also seems likely that stress is perceived by the individual when the goals of one or more systems conflict. It is the intent of this research to investigate the interactions between systems and the possibly resulting stress created by intersystem conflict. To this end seven hypotheses have been formulated for empirical investigation. The following chapter (Chapter II) discusses the empirical research relevant to this study.
CHAPTER BIBLIOGRAPHY


CHAPTER II

SPECIFIC EMPIRICAL VALIDATION: A REVIEW OF THE LITERATURE

The primary focus of this research is the interface between the individual, the organization, and the family and stress. The literature review thus reflects the major areas of concern in this study. Primary emphasis is placed on the empirical research concerning the impact of the family system upon the individual at work and occupational stress. However, a short section on expectancy theory research is included to illustrate some of the conceptual and methodological problems associated with the understanding of the individual as a system of perceptions.

The Individual

Lawler's (16) motivation-performance model discussed earlier is an extension of Vroom's (27) basic expectancy theory. A substantial body of literature currently exists relating to expectancy theory based upon Vroom's original theories. This section will briefly discuss Vroom's motivation model, recent research-based modifications to the model, and some methodological and conceptual issues in expectancy research.
Expectancy Theory

In 1964, Vroom (27) pulled together the works of a number of researchers to formulate his general theory of work motivation. The following schematic outlines the basic interrelationships of the variables Vroom considered.

\[
\begin{array}{ccc}
\text{Valence} & \text{Expectancy} & \text{Ability} \\
V_j & \text{Force} & \text{Performance} \\
\text{Instrumentality} & \text{x} & \text{x} \\
\end{array}
\]

Fig. 3--Vroom's expectancy model

At any point in time, a person has preference among outcomes or states of nature. For any pair of outcomes, a and b, a person prefers a to b, prefers b to a, or is indifferent to whether he receives a or b. Vroom (27) uses the term valence in referring to effective orientations toward particular outcomes. In his model an outcome is positively valent when the person prefers attaining it to not attaining it (i.e., he prefers a to not a). An outcome has a valence of zero when the person is indifferent to attaining or not attaining it (i.e., he is indifferent to a or not a), and it is negatively valent when he prefers not attaining it to attaining it (i.e.,
he prefers not a to a). Valence can thus take a range of both positive and negative values.

Vroom specifies the expected functional relationships between the valence of outcomes and their expected consequences in the following proposition.

Proposition 1. The valence of an outcome to a person is a monotonically increasing function of the algebraic sum of the products of the valences of all other outcomes and his conceptions of its instrumentality for the attainment of these other outcomes (27, p. 17).

The same proposition can be shown in equation form as follows:

\[ V_j = f_j \sum_{k=1}^{n} (V_k I_{jk}) \]  \( (j = 1 \ldots n) \)

where \( V_j \) = the valence of outcome \( j \),

and \( I_{jk} \) = the cognized instrumentality of outcome \( j \) for the attainment of outcome \( k \) (27, p. 17).

In almost every choice decision, there is an element of uncertainty as to outcomes, which are somewhat dependent upon events outside an individual's control. This uncertainty implies that even though an individual has high valence for specific outcomes there are subjective probabilities associated with those outcomes which will affect his or her choice. An expectancy is defined as a momentary belief concerning the likelihood that a particular act will be followed by a particular outcome. Expectancies may be described in terms of their strength. Maximal strength is indicated by subjective certainty
that the act will be followed by the outcome, and minimal (or zero) strength is indicated by subjective certainty that the act will not be followed by the outcome (27, p. 17).

The differences between the concepts of expectancy and instrumentality should be noted. Expectancy is action-outcome association ranging from zero, indicating no subjective probability that an act will be followed by an outcome, to one, indicating certainty that the act will be followed by the outcome. Instrumentality, however, is an outcome-outcome (the attainment of one outcome leading to the attainment of another outcome) association ranging in value from -1 to +1 (27, p. 18).

Vroom uses the term force to indicate that behavior is a result of a field of forces, each of which has direction and magnitude. Force, or motivation, then is a result of combining the concepts of valence and expectancy. There are a number of ways in which these variables may be combined; however, Vroom offers the following proposition to express the relationship as he perceives it:

Proposition 2. The force on a person to perform an act is a monotonically increasing function of the algebraic sum of the product of the valences of all outcomes and the strength of his expectancies that an act will be followed by the attainment of these outcomes (27, p. 18).

This proposition is also expressed algebraically as:
\[
F_i = f_i \left[ \sum_{j=1}^{n} (E_{ij}J_j) \right] \quad (i = N + 1 \ldots M)
\]

where \( F_i \) = the force (motive) to perform act \( i \),

\( E_{ij} \) = the strength of the expectancy that act \( i \) will be followed by outcome \( j \),

and \( V_j \) = the valence of outcome \( j \) (27, p. 18).

Vroom notes a number of implications by expressing the relationship in this manner. An outcome with high positive or negative valence will have no effect on the generation of a force unless there is some expectancy that the outcome will be attained by some act. As the strength of an expectancy that an act will lead to an outcome increases, the effect of variations in the valence of the outcome on the force to perform the act will also increase (27, p. 19).

Once the force to perform has been established, ability becomes a moderating factor of performance. Vroom expressed this relationship as ability times force resulting in a specific level of performance.

**Research Conclusions**

The model developed by Vroom has undergone four developments in the last few years: (1) distinction between first-level and second-level outcomes, (2) identification of intrinsic sources of valence, (3) distinction between Expectancy 1 and Expectancy 2, and (4) elaboration to
predict the effect of given additional variables in the work situation (28, p. 127).

Outcomes have been separated into first-level outcomes, which refer to the level of performance resulting from a given amount of effort, and second-level outcomes, which are the rewards or penalties obtained as the result of the level of performance or the result of the effort expended. It is possible that individuals distinguish between the outcomes and apply valences, instrumentalities, and expectancies to both levels (20, p. 523). This distinction between outcomes implies that an individual may perform for the satisfaction either of the job itself, the extrinsic rewards of the job, or a combination of both.

In a similar view intrinsic sources of valence have been identified. These intrinsic valences include the degree of satisfaction or pleasure the individual receives from the activity or work behavior itself regardless of the outcome, as well as the degree of satisfaction or pleasure the individual derives from the accomplishment of the work goal regardless of extrinsic rewards (28, p. 128).

A further extension concerns the distinction between Expectancy 1 and Expectancy 2. Expectancy 1 is defined as the perceived belief that effort will lead to performance or to second-level outcomes. Expectancy 2
concerns the perceived belief that performance will lead to second-level outcomes (20, p. 523).

Other modifications to Vroom's model include the effects of additional variables such as role perceptions, equity theory, and degree of internal vs. external control (28, p. 127). Each of the concepts has been shown by various researchers to have some effect on motivation or performance. Exactly how these variables interact is, however, not yet known.

In two recent literature review articles Wahba and House (28) and Connolly (3) raise a number of conceptual and methodological issues associated with research on expectancy theory. Between 1966 and 1974, over thirty reported empirical studies were connected with expectancy theory and their results have offered only mixed support. Part of this variability of support may be due to problems of concepts and methodology (3, p. 37). In the following section some of the problems associated with the rationality assumptions underlying expectancy theory, expectancy, valence, and the interaction between expectancy and valence will be reviewed.

There are three problems of preference or indifference between alternatives and transitivity of preferences and indifferences. To make a choice among two alternative actions, an employee should be able and willing to choose one outcome over the other or be indifferent between them.
Here the crucial condition is the implicit assumption of comparability between outcomes, where many work outcomes are non-comparable. People do not hesitate to make preferences between theoretically non-comparable outcomes, thus adversely affecting research results.

Transitivity assumes that if an individual prefers a over b, and b over c, then a would be preferred over c. There is substantial experimental evidence, however, that people do not follow that transitivity assumption. In-transitivities may be expected to occur frequently in work situations due to the multidimensional nature of actions and outcomes. This feature has not yet been incorporated into current expectancy theory (26, p. 706).

Another issue is the additivity and nonadditivity of expectancies and the distinctions between various forms of expectancy. It is generally assumed that expectancy takes the same values as objective probabilities; however, experiments have shown that people do not behave this way. Subjective probabilities are based on personalistic perception of likelihood and thus may not add up to one, which does not fit into measurement theory. Factors that influence such perceptions seem to differ according to different situations, different groups, and different individuals (3).

Vroom's model does not permit an individual to assign a probability estimate to the instrumentality of first-level
outcomes for second-level outcomes. A number of researchers have thus discriminated between what is now termed Expectancy 1 and Expectancy 2 and report that a greater predictive power can be obtained (20).

Several issues result from the lack of theoretical clarity of the concept of valence as applied to work situations. These are the inconsistencies of the concept of instrumentality and the nonadditivity of valences.

With respect to instrumentality, the predictive power of negative instrumentality is not yet known and, therefore, the theory has not been adequately tested. Whether subjective probabilities ranging from zero to one or instrumentalities ranging from -1 to +1 are the best predictors is not yet known. It is typically claimed that the valence of an action is the summation of the valences of all possible outcomes. It appears that this assumption is very difficult to operationalize and becomes more complicated if the interaction between the quantity or frequency of outcomes and their valences is considered (20).

Another major issue here is the multiplicativity versus the additivity of expectancies and valence. Some studies have shown support for additive combinations while others have supported multiplicative combinations. None of the research has compared the two methods of
combining the independent variables to determine which is
the more predictive of motivation (28).

A number of studies have been conducted to determine
whether valence and expectancies should be combined ad-
ditively or multiplicatively to predict motivation (28,
pp. 141-142). Some studies have supported additive com-
binations; others, multiplicative combinations. No con-
clusions can be reached on this point. The issue of
logical behavior has also received consideration recently.
Four recent articles (3, 20, 25, 28) have concluded that
the assumption of rationality is of dubious value. It
may be that the theory, founded on considerations of
rationality, can serve as a useful predictor in situations
where contingencies between acts and outcomes and between
first-level and second-level outcomes are clearly perceived
by the individual, whereas ambiguous situations force the
individual to develop a choice mechanism not based on the
expectancy variables (20, p. 534).

Expectancy theory and its related literature demon-
strate the complexity of the individual at the work place.
For the personnel professional, expectancy theory pro-
vides a sound theoretical basis for rational decision-
making concerning motivation, performance levels, and
rewards. Basically expectancy theory indicates that
employees are individuals with individualistic needs and
motives for working. The personnel administrator should
take the individualistic nature of employees into account when designing and implementing reward systems.

Yet even the large amount of empirical research on the various aspects of expectancy theory have failed to completely explain all work behavior. That the individual is a complex set of interrelated perceptions is well documented for the work place. Yet very little discussion exists about external influences upon the individual while at work. It would seem likely that a more complete model of work behavior could be formulated if such external environmental influences as the family were considered.

The Work-Family Relationship

The previous discussion concentrated on a number of work-related factors that combine to influence behavior at the work place. As was noted previously, there has been little empirical investigation into the effects of external influences upon work behavior. In this section the pertinent literature concerning the influence of the family upon work behavior is reviewed.

Literature Selection Criteria

Although much has been written about the family and about the effects of work upon the family, very little empirical research has been conducted on the influence the family has upon work (5, 11, 19, 23). The focus of this research is on the effects that the family may have
upon the individual at work; therefore only the literature concerning the effects of the family upon work will be reviewed. In addition a substantial body of literature of a purely subjective nature exists concerning the work-family relationship. However, only empirical research pertinent to the family influencing work behavior is reviewed here. These selection criteria result in a rather limited number of empirical research studies concerning the influence of the family upon the individual at work. Some of this research is of an international nature, and transferability of conclusions to the American culture is questionable but will be reviewed.

**Studies Reviewed**

In 1956, Dyer (7) studied the relationships between blue-collar workers' job satisfaction and their families' perceptions of the workers' jobs. Using 45 lower occupational families as subjects, researchers visited each home and had each family member over ten years of age complete a self-administered questionnaire. Correlation analysis was then used to compare fathers', wives', and children's scores on job satisfaction and perceptions.

Results showed a high correlation between a father's job satisfaction score and the combined scores of his perceptions of his wife's and children's feelings (.66) and between the father's satisfaction and the combined
scores of wife and children (.81). The generally high correlations suggested that the blue-collar father was aware of his wife's and children's feelings and that his perceptions coincided with his own satisfaction. Also the actual feelings of the wife and children were highly associated with the father's own feelings. Dyer concluded that "it is difficult to assess their cause and effect . . . it appears there is something of a circular action with feelings initiated from both" (7, p. 232).

In a study of absences from work in a Dutch firm, Gadourek (8) could find no relationship between absenteeism and general satisfaction; however, he did discover some interesting work-family relationships. Using data from 21 firms and questionnaires from supervisors and non-exempt employees (N = 2,209), Gadourek found that the number of dependents was slightly associated with the frequency of absence (8, p. 231); that married workers expressed complaints or experienced minor troubles more often than their younger, single peers (8, p. 168); and that workers whose wives and kin had negative judgments about the workers' job had more psychosomatic complaints (8, p. 233).

As part of a larger investigation, Bailyn (1) studied the career and family orientations and marital satisfaction of a group (N = 223) of married couples eight years after the women graduated from a British
university. Although the primary focus of the study was the family, results were presented which indicated family-work interface. Of those working husbands who returned questionnaires from the survey population, over half (58 per cent) indicated that they derived the most satisfaction from their families and 27 per cent said their careers were most satisfying. Additionally, of those that chose family as most satisfying the majority chose work second. Conversely, those that chose work first usually chose family second.

In comparing work or family orientations of both men and women, it was found that marriages in which both the man and the woman were highly career oriented were not very happy. All other combinations of orientations seemed to be associated with about the same degree of marital happiness.

Guest and Williams (9) conducted a study among young (ages 25 to 35) British executives (N = 1,200) and noted several interrelationships between work and marriage. They found that those executives who were married attached significantly more importance to living in a desirable area and having a job which provided status and respect in the community. Married executives were much more geographically selective and many turned down jobs that were in the wrong location. Unmarried men placed more importance on co-workers than location.
Children were also influential in that those executives with children placed more importance on job security and had less time to be highly job involved.

In the same article, Guest and Williams also report a study by an international firm which sends large numbers of executives on overseas assignments. In a sample of nearly 1,800 executives in 70 countries they found that the two most important aspects of overall job satisfaction were the job itself and the degree to which the executive's wife had adjusted to the foreign culture. Americans in the same example, however, noted that the adjustment of the wife had far more influence on job satisfaction than did the job itself. This example points out one aspect that may sometimes be overlooked. Studies conducted in other cultures may provide valuable insight into the family-work relationship; however, attempting to generalize from one culture to another may result in faulty conclusions.

In a 1969 study, Ridley (24) investigated the relationships of job satisfaction and involvement to marital adjustment. The purpose of the study was to discover how occupational roles and role behavior of working husbands and working wives influence marriage roles and role behavior. Using female public school teachers and their husbands as subjects (N = 108 pairs), Ridley administered a questionnaire employing the Bullock Scale of Job
Satisfaction, a job involvement scale designed for this study, and the Nye-MacDougall Marital Adjustment Inventory.

Although the major thrust of this study was employed wives, it was found that teachers and their husbands followed different patterns concerning the job satisfaction-marital adjustment relationship. Working men were found to have a positive and significant (p > .01) relationship between job satisfaction and marital adjustment. A significant (p > .05) relationship was also found between job satisfaction and marital adjustment (for men) when they were at a higher educational level or a higher income level, or were in a professional occupation. Data concerning the job involvement-marital adjustment relationship suggested that job involvement had little overall influence on marital adjustment.

Although the results of this study are interesting, any conclusions reached from them must be considered very tentative. The occupation for wives (teaching) was constant; however, the husbands (N = 111) worked in a variety of different occupations and organizations, and there was apparent bias in the job involvement scale.

Renshaw (6, 21, 22) studied the family-work interface among a group of managers and their wives who either experienced extended travel in their jobs or were relocated to the U.S. on a temporary basis. During the two-and-one-half-year research project, 126 people were interviewed
(employees, spouses, and relatives). In addition, some participated in company-sponsored workshops dealing with stress associated with travel ($N = 25$), including both employees and spouses.

Company-sponsored workshops concentrated on the problem-solving ability of family members to cope with travel-induced stress. Unfortunately, the small size of the workshop groups made statistical inferences and conclusions rather tenuous at best. However, Renshaw and Culbert (6) do note that the seminar apparently increased the problem-solving resources of husbands and wives, increased the couples' abilities to cope with stress due to travel, and produced changes in work-related behavior. They conclude that the seminar format employed demonstrates the interdependence of the family and the organization and shows that "progress can result from meeting issues at that interface head-on" (6, p. 337).

Burke and Weir (2), using 189 husband-wife pairs, investigated a number of marital and occupational variables. Instruments were used to measure job stress (13, 14), life stress, satisfaction with informal help of spouse, mental and physical well-being (10), marital satisfaction (17), satisfaction with life, and job satisfaction. Husbands in the married pairs were engineers ($N = 54$), industrial accountants ($N = 74$), or
chartered accountants (N = 61) and all resided in the province of Ontario, Canada.

Results showed that husbands, wives, and pairs who were more satisfied with the amount and kind of informal help provided by their spouses were also more satisfied with their jobs, lives, and marriages, and reported fewer illnesses. Correlations between measures of job and life stress, job and life stress composite, and the measure of well-being showed that 32 of the 35 correlations were .05 or better. In general, those individuals reporting greater life and job stress were also less satisfied with their job situations, lives, and marriages, and reported more psychosomatic symptoms.

Burke and Weir conclude that those individuals who reported experiencing greater stress in different areas of their lives were likely to be less satisfied with their marriages and lives in general. Additionally it was apparent that the degree of satisfaction with spousal helping behavior was related to both the stress and well-being variables. Thus, helping behavior tended to moderate the effects of stress and was positively related to positive attitudes toward marriage and life in general. This effect was most pronounced in those individuals reporting a higher degree of stress.
Conclusions

In the literature to date there appears to be some support for the contention that family systems and work systems overlap in a number of areas. Relationships have been found between job satisfaction, marital adjustment, life satisfaction, and the reduction of stress effects through marital coping behaviors. In addition, there appears to be a relationship between work-related decision-making when the family is a consideration—for example, when such decisions involve the geographic location of the family, family adjustment to a different culture, and the worker's extended absence from the family.

It is apparent from the literature on work-family overlap that there are many instances when the organization should consider the family in its decision-making. Basically the organization needs to determine the impact of its decisions upon the families of its employees and how employees' families affect employees' work behaviors. Such knowledge can then be used to help employees maintain a balance between their family needs and their work commitment.

Stress resulting from the overlapping of the family systems and work systems has not been extensively researched. However, the topic of stress has been considerably researched, particularly the areas of life events stress, occupational stress, and psychosomatic illnesses.
Recent findings from the research on stress are viewed in the following section.

**Stress: Theory and Research**

An abundance of literature exists concerning the creation and reduction of perceived stress and stress-related outcomes. The research reviewed in this section pertains primarily to occupationally-induced stress and symptomatic stress behaviors.

**Theoretical Concepts**

Figure 4 is drawn from the work of Cooper and Marshall (4) and demonstrates the basic conceptual model employed in this research. In this model two broad areas of stressors are identified as they relate to the family system and the work system. These stressors (or stressful events) are believed to produce within the individual a level of stress dependent upon how the individual perceives those stressors. In addition, the level of individual stress is moderated by both environmental and personal variables. The individual then reacts to high perceived stress by exhibiting various dysfunctional behaviors and eventually mental ill health or coronary heart disease.

The effects and sources of job stress have been amply demonstrated in a number of studies (4, 5, 12) from both the experimental setting and the work place. These studies suggest that stress is a causal factor in the
Fig. 4--Conceptual/theoretical model (4, p. 12)
development of coronary heart disease and mental ill
health which together "represent a serious cost for
industry both in human and financial terms" (4, p. 11). Some of the sources of occupational stress which have
been identified include the following:

1. Those intrinsic to the job, such as poor working conditions, time pressures, etc.
2. The individual's role in the organization, and resulting role ambiguity and conflict.
3. Career development such as overproduction and underpromotion.
4. Relationships at work with the boss, subordinates, or peers.
5. The organizational structure or climate with little participation, budget constraints, office politics, etc. (4).

Stress Research

Sources of pressure (stress) at work will evoke different reactions from different people. Some individuals are better able to cope with stress and adapt to their environment while others are more predisposed to stress. A number of research studies have investigated personality characteristics and behavior patterns associated with individual differences in coping with stress (5). Studies utilizing the MMPI and the 16PF and stress-related disease
in retrospective studies portray the individual with coronary heart disease (CHD) as emotionally unstable and introverted. However, it is possible that the anxiety neuroticism found in these individuals may be a result of CHD rather than a contributing factor (4, p. 23).

The other research approach to individual stress differences has concentrated on the behavioral patterns of the individual and stress-related disease. These studies have differentiated between the coronary-prone behavior pattern type A as distinct from type B (low risk CHD). The type A individual was found to exhibit overt behavior or a style of living characterized by extremes of competitiveness, striving for achievement, aggressiveness, haste, impatience, restlessness, hyperalertness, explosiveness of speech, tenseness of facial musculature, and feelings of being under pressure of time and under challenge of responsibility (4, p. 23). Kast (15) notes that the research on type A behavior does not clearly implicate the work environment yet does justify the conclusion that type A behavior is an established risk factor for stress-related CHD.

Symptomatic behaviors of work-related stress concern both the physiology and the overt behavior of the individual. Researchers have noted the following as some of the possible symptoms an individual might exhibit
under high levels of stress: high blood pressure, high cholesterol level, increased heart rate, high levels of smoking, depressive moods, escapist drinking, job dissatisfaction, etc. (5). Those individuals who remain under high stress levels for extended periods are then more likely to develop some forms of CHD or mental ill health.

In addition to the personal characteristics of the individual as stress moderators, it is theorized that the social environment of the individual will also be a moderator. In effect, the theory states that the social environment, whether the family system or the work system, can be either a source of stress or an influence in decreasing the effects of stress. As the individual as a system of perceptions (Figure 4) interacts with the work system, stress can be created or relieved. Using Lawler's concept of the problem-solving approach (or role) as an example, it has been well documented that conflicts in this perception between individual and work system do cause stress resulting from role ambiguity (4, p. 16).

Role stress can be caused by such factors as inadequate information (or lack of clarity) about work objectives, colleagues' expectations, scope and responsibilities of the job, or conflicting job demands (4, p. 16). If these factors lead to stress, it is just as likely that adequate communications and support from the
organization will help lessen stress or prevent it from occurring to a great extent.

This does not mean that lack of stress is an ideal state. As Meglino (18) notes, there appears to be an inverted U-shaped relationship between job performance and job stress. This curvilinear relationship suggests that for complex tasks or poorly learned jobs low levels of stress correlate with low levels of performance. Moderate levels of stress correlate with the highest levels of job performance and high levels of stress correlate with low levels of performance (18, p. 57).

Such a complex stress-performance relationship implies that management needs to determine an optimal stress-task relationship for each employee. Quantitatively defining and establishing an optimal stress level for each employee, while conceptually and theoretically possible, is not practical as an organization-wide undertaking. It is important for the organization to understand stress and its possible outcomes, and to ensure that all managers have some training in the areas of stress and stress management. It is the responsibility of the personnel manager to promote an awareness of stress and stress outcomes and to provide adequate cost-effective stress management training. Additionally it is possible for the personnel department to monitor selected stress variables on an
organization-wide basis and to intervene if stress is abnormally high in a particular department, section, etc. of the organization.

Stressful events or perceptions can occur in many segments of an individual's life. It is therefore possible that stress occurring in one segment (i.e., the family system) may have a relationship with behaviors which occur in another segment of the individual's life (i.e., the work system). The interrelationships between stress and work and family are discussed in the following section which presents a model developed from the literature.

Proposed Model

From the literature it appears that the creation of stress may be related to a number of variables interacting in such a manner as to develop a cognitive perception within the individual of what might be termed a total amount of stress at any one time. Selected variables are separated for this study into two categories: (1) work-related and (2) family-related. This does not mean that all stress is assumed to originate only in the two systems of work and family and only from those variables selected. For this study, however, stress will be defined as being comprised of events and behaviors which tend to create or modify stress only in the work system.
and the family system. An individual's perception of stress in turn appears to be related to such outcomes as job productivity, job satisfaction, and psychosomatic illnesses.

The following model has been developed incorporating the variables of stress development and stress outcomes in two different systems. The model is empirically investigated in this study.

**Relationships between Types of Stress and Behaviors**

Within each of the two systems in which an individual exists (family and work), there are situations, events, and behaviors which tend to create stress and/or reduce the perception of stress. These stresses are then associated with work-related outcomes such as job productivity, job satisfaction, and illness.

Events that are considered inherently stressful occur within the work system. Such events may be a change in the type of work performed or a change in the amount or type of responsibilities of the job. Yet actual events are not the only factors to consider in work-related stress. Two other variables, group support and occupational stress, also seem likely to influence work stress (see Figure 5). Occupational stress is a combination of role and ambiguity perceptions, and it is the individual's perceptions of a job or events which are associated with
Fig. 5--Theorized relationships between stress variables and stress outcomes
stress outcomes. Group support is considered a moderating variable between actual events and occupational stress.

The second system where stress is likely to occur is the family system. As in the work system, there are events in the family system which are inherently stressful. Such events could include, for example, divorce, marriage, or the death of a spouse. These events will be moderated by marital helping behavior and associated with marital stress (Figure 5). Marital stress is an overall perception of the degree to which a marriage functions successfully, including handling stress.

It is also theorized that variables in one system will be associated with variables in the other system. The degree of association between variables in the work system and the family system is one of the main concepts to be tested in this study. The second major portion of this study concerns those outcomes exhibited at the work place.

**Relationships between Stress and Illness**

An individual's perceptions of stress are related to a number of outcomes relevant to the work system and possibly the family system. As the level of stress varies, a relationship exists between stress and an individual's job productivity and job satisfaction. Additionally, various levels of stress should also be
associated with behaviors within the family system such as changes in the interpersonal relations between family members. A relationship also exists between levels of stress and psychosomatic illnesses such as headaches, ulcers, and cardiovascular disease. As the level of stress increases, so does the likelihood that some form of psychosomatic illness will develop.

One additional variable intervenes between stress and outcomes. This variable is the behavior patterns associated with CHD-prone individuals (type A behavior). Figure 5 shows the theorized relationships between total stress (work and family), type A behavior, and stress-related outcomes.

The theoretical relationships to be investigated in this study are shown in Figure 5. One note of caution must be made when reading this figure, however. The arrows presented in the figure would seem to indicate some degree and direction of causality; but no such representation is intended. Since the figure represents an open system of events and perceptions, it is possible that extensive feedback occurs between variables. For instance, an onset of illness may be preceded by stress; however, an illness may also be a causative factor in the development of stress. For this study no causal relationships are assumed to exist, and only the degree of interrelationships will be discussed.
Summary

Chapter II has reviewed the literature relevant to the individual as a set of perceptions, the influences of the family upon work behavior, and stress in the work place. The literature seems to suggest that the interactions between the individual, the work place, and the family have the potential to create and modify stress. Stress has been shown to have a direct impact on work behavior in the area of performance and psychosomatic illnesses. From the literature a model has been formulated which combines work and family stressors, work group support, marital helping behavior, occupational stress, marital stress, type A behavior, and the outcomes of job productivity, job satisfaction, and illness.

Although many of the relationships depicted in the proposed model have been empirically investigated, this research is the first attempt to incorporate all the above variables in a single study. As Cooper and Marshall (4) note in their review of occupational stress,

Not very much research work has been done into some of the more important extra-organizational factors, particularly the relationship between family and work life. . . . suffice it to say that research inquiry is needed here both to identify these stressors and to assess their degree of influence in stress related disease (4, p. 22).

This research study investigates the important area of work and family life in an effort to better understand work behavior.
CHAPTER BIBLIOGRAPHY


CHAPTER III

METHODS AND PROCEDURES

In order to investigate the relationships between the variables of the proposed model (see Figure 5, p. 56), it was necessary to design a methodology that would provide reliable data from the sample population to test the hypotheses of the study. Several decisions were made at that point about the research design.

1. A paper and pencil questionnaire would be used to collect the data. This would allow the gathering of sufficient data to make statistical analysis reliable.

2. The questionnaire would be comprised of instruments that had been developed by others and had proved reliability. This decision would allow for comparability of results and improved reliability of data.

3. The questionnaire would be detailed enough to provide meaningful data, yet short enough to avoid rater fatigue.

4. The population chosen for study would be mid-management employees of a single organization. Mid-management was defined for this study as all employees above the first level supervisory position and below the level of division vice-president (27). Mid-management
employees were chosen because it was felt that this group would provide a wide variety of demographic types, were likely to be married, and would return accurate data. A single organization was chosen to minimize extraneous organizational variables (size, structure, etc.).

5. Questionnaire distribution would be accomplished in a manner that would satisfy the requirement of both the research design and the organization. Ideal questionnaire distribution would be to groups of subjects who would fill out the questionnaire at that time. However, few organizations are willing to provide that degree of assistance for research purposes. The next most desirable method of questionnaire distribution would be through intercompany mail with a cover letter on company stationery. The latter method of questionnaire distribution was the one actually employed.

The following list represents the variables for which data have been collected for this study.

1. Demographics (8 items)
   a. Age
   b. Sex
   c. Educational level
   d. Marital status
   e. Income
   f. Organizational level
   g. Number of children
   h. Age of youngest child

2. Number of days of work missed due to illness in the last six months (DAYS MIS)

3. Role conflict and ambiguity (RLCLAM)

4. Job satisfaction (JDIOVALL)

5. Managerial performance (PERFI)

6. Work group support (WKGSUP)
7. Marital stress (MARSAT)
8. Marital helping behavior (MHB)
9. Type A behavior (TYPEA)
10. Life events stress
   a. Health events (LESH1-4)
   b. Work events (LESW1-4)
   c. Home and family events (LESFA1-4)

Each of the variables in 10 above contains measures for 19-24 months ago, 13-18 months ago, 7-12 months ago, and 0-6 months ago. For example, LESH1 indicates life events stress for the time period 19-24 months ago, LESH2 for the time period 13-18 months ago, etc. The instruments and definitions for variables 2 through 10 are discussed below.

Instruments and Definitions of Variables

A number of factors or variables have been previously identified as being relevant to this study. The creation and reduction of stress in the family system and the work system and resulting stress outcomes comprise a complex system of interrelated variables. This section describes the instruments used to measure those variables relevant to the study.

Care was taken to develop an instrument to test the proposed model and hypotheses. The resulting questionnaire used in this study is comprised of several different instruments having relevance to the study, having established reliability or validity, and having been successfully used in previous research. Each variable is identified, and the
instrument used to measure that variable is discussed. For this study each variable is operationally defined by the questionnaire used to measure that variable.

Additionally, it was necessary to consider the possible impact of sequence bias that might be inherent when using several instruments. It was therefore necessary to randomly sequence each instrument in the questionnaire packet. A randomized order was developed by first assigning each instrument a number, then generating a sequence of random numbers by computer and finally inserting each instrument according to the random pattern generated. The only exception to this ordering was the demographic section, which was always placed first, and the last page instructing the subject to return the questionnaire.

A pretest of the questionnaire, using graduate students in the College of Business Administration at North Texas State University, was conducted. Students were told the nature of the research being conducted, were asked to fill out the questionnaire on a voluntary basis, and were told to note the amount of time required to complete the entire questionnaire. Part of the original intent of the pretest was to determine if a random or logical questionnaire sequence would indicate bias. Unfortunately, not enough usable questionnaires (those indicating married) were returned to permit the appropriate statistics to be computed. The pretest indicated that the instructions
for the questionnaire were understandable and that the mean time to complete the questionnaire was thirty minutes.

**Family Stressors**

Life changes such as divorce or reconciliation call for readjustments in behavior. Coping with the changes may be frustrating and maladaptive. As the number and stressfulness of these life changes increases, the increasing personal costs associated with the changes are likely to produce decrements in complex performance as well as psychosomatic illnesses.

Life changes associated with the family during the twenty-four-month (in six-month intervals) period prior to data collection will be assessed by a standardized weighted checklist—the family portion of the Rahe-Holmes Recent Life Change Schedule (RLC). This instrument (see Appendix B, pp. 173-186) contains a representative number of significant life-change items which are scaled to represent the degree of readjustment required in order to cope with each change and are operationalized in terms of life change units. These items define the family-associated stressors used in this study and the relative weights associated with each (or the potential amount of perceived stress). The weights (see Appendix C, pp. 187-189) for each of the items used in this research were
obtained from studies by Rahe (20, 21) and Henry and Stephens (14).

Considerable evidence exists to support both the reliability and validity of this instrument for total life change. Reliability decreased as the amount of time increased between test-retest from .90 (eight months) to .26 (two years). A number of studies have also demonstrated the validity of this instrument for predicting illness and quality of performance (14).

Since the purpose of the present study concerns the family and work, only that portion of the Recent Life Change Instrument dealing with the family is used to indicate family stress. Although there are many areas of potential stress other than the family, an analysis of the instrument shows that of the five categories of events (family, personal, work, health, and financial) the family portion accounts for 41 per cent (17) of the total items (43) and 52 per cent (780) of the total possible points (1,499). The total family stress instrument is comprised of 18 items. Items on this scale were totaled and constitute family stress.

Subjects were asked to indicate those life events which they had experienced during the last twenty-four-month period in six-month intervals. This is the standard time interval used on the RLC questionnaire.
Work Stressors

Work stressors represent actual events occurring within the work environment which might be perceived as stressful. Work stressors are assessed by using the work portion of the Rahe-Holmes Recent Life Change Schedule (RLC) discussed above. The weights for each of the stress items (see questionnaire, Appendix B, pp. 173-186) were obtained from studies by Rahe (20, 21) and Henry and Stephens (14).

Subjects were asked to indicate the life events which they had experienced on the job during the last twenty-four-month period, in six-month intervals. Only that portion of the RLC pertaining to work (items 5-11) was used to indicate work stressors.

Managerial Performance

In order to assess the current level of managerial performance, a self-rating instrument developed by Heneman (13) was used (see Appendix B, pp. 173-186). This instrument uses a seven-point rating scale (1 = low performance to 7 = high performance) to assess nine dimensions typically associated with management. These dimensions have been carefully selected to be both specific enough to be behaviorally meaningful yet general enough to be applicable to many types of jobs. The dimensions selected were planning, investigating, coordinating, evaluating,
supervising, staffing, negotiating, representing, and overall effectiveness. The dimensions selected theoretically represent activities carried out in varying degrees by managers, regardless of specific job or position. This taxonomy is supported by both reliability and validity.

In a test of this instrument by Heneman (13), both supervisors and subordinates (102 usable pairs) were asked to fill out the same instrument. Results showed that there was a tendency for self-ratings to be less lenient and more variable than superior ratings. For three of the dimensions (investigating, staffing, and negotiating) differences were statistically significant. Heneman suggests that such differences may have resulted due to the fact that the ratings were used for research purposes only. Additionally, self-ratings contained less halo error than did superior ratings, another factor which is "...in favor of self-ratings..." (13, p. 642). The evidence was only partially supportive of the convergent (significant in five dimensions) and discriminant validity of the ratings. Heneman notes that "...in part, large halo error in the superior ratings may have inhibited high convergent validity and, in turn, the ability of the superior ratings to meet the second requirements of discriminant validity" (13, p. 642).

Research showed that self-ratings possessed less leniency, restriction of range, and less halo error than
did superior ratings. Heneman has concluded that self-ratings "... should be seriously considered when it is made clear that the results are used for research purposes only" (13, p. 642).

In another study comparing self and superior ratings, Baird (3) concluded that his study supported the work of Heneman; i.e., self-ratings exhibited less halo error than superior ratings. However, Baird indicated that self-ratings are not only an indication of organizational performance but also an indication of a person's self-image (3, p. 299).

**Work Group Supportiveness**

In coping with stressful situations, the environment in which an individual operates is likely to influence the degree of success in coping behavior. In an organization the climate for support, as perceived by the individual, then becomes an important factor in stress research. In a climate which is cold, impersonal, and unsupportive the individual will receive little assistance in coping with stress and may seek support in other social systems, e.g., the family.

The instrument designed to measure work group supportiveness consists of four dimensions on a five-point scale (see Appendix B, pp. 173-186). In previous research this instrument has shown a Cronbach's alpha of .78 and has
been correlated with a measure of trust in the superior 
(r = .51, p < .001) and with perceptions of information 
accuracy and communication openness (r's = .41 and .58, 
\( p < .001 \)) (6, 18, 24).

**Marital Stress**

The success or failure of an individual to cope with 
stress is affected by the social environment in which an 
individual functions. In the family system that is charac-
terized by unhappiness, dissatisfaction, and thought of 
divorce, it is unlikely that an individual will receive 
support for coping with stress. However, it is also likely 
that this type of family environment is in itself a stress-
ful situation. The degree of marital success or adjustment, 
as measured by the Nye-MacDougall Marital Adjustment In-
ventory, is used in the present study as the indicator of 
the climate of the family system.

The Marital Adjustment Inventory (see Appendix B, pp. 
173-186) is a Guttman-type scale which measures a single 
dimension of marital success. Nye and MacDougall analyzed 
the interrelationships of several criteria of marital ad-
justment including happiness, satisfaction, quarreling 
frequency, confiding in husband, considering a divorce, 
and living apart following a quarrel. The significant 
interrelationships found among these criteria suggested 
the possibility of a single dimension in marital adjustment
(arguing behavior). The Cornell technique was employed to scale the nine items remaining in the scale.

The derived scale fulfilled the criteria of a quasi-scale. Scalability was tested by utilizing a general sample of 100. These produced coefficients of reproducibility of .86, .87, and .88. The Israel Gamma technique raised the reproducibility to .97 or higher. The other prerequisites of a scale were generally fulfilled (17, p. 69). Additionally, analysis of the scale patterns of the items indicates a minimal marginal reproducibility of .66. Thus the coefficient of reproducibility represents a significant improvement in reproducibility over the minimum level required (2, pp. 362-364).

**Occupational Stress**

One of the major factors of occupational stress is associated with a person's role at work. A great amount of research has concentrated on role ambiguity and role conflict (10, p. 16). Role ambiguity exists when an individual has inadequate information about his work role, i.e., when there is a lack of clarity about the work objectives associated with the role. Role conflict exists when an individual in a particular work role is torn by conflicting job demands or doing things he/she really does not want to do or does not think are part of the job specification.
Rizzo, House, and Lirtzman (23) have developed a scale which adequately measures these two potential stressors, role conflict and role ambiguity (see Appendix B, pp. 173-186). Development of the questionnaire began with a 30-item instrument (15 items for role ambiguity and 15 items for role conflict) derived from the literature and administered to 290 salaried managers, technical employees, first level foremen, and clerical personnel. Responses obtained from the questionnaire were then factor analyzed using an image covariance method and rotated using a varimax criterion in order to test the relationship and the structural relationships of the role conflict and ambiguity definitions. Items loading at .3 or greater were selected from the two factors that emerged from the rotation. The two factors were labeled role conflict and role ambiguity and accounted for 56 per cent of the common variance of the 30-item set.

In one study Miles (15) reports using nine different governmental organizations and five major organizational roles as subjects (N = 202). The measure of Rizzo and his colleagues was used successfully to correlate role ambiguity and role conflict with job-related tension and anxiety (.31 and .25, p < .001) and job satisfaction (-.41 and -.25, p < .001). The Miles study tends to support the hypotheses that role conflict and ambiguity are an adequate measure of job-related stress (15, p. 28).
Rizzo (22) suggests the administration of all items. All items were administered and this portion of the total questionnaire was factored to determine subscales and item loading on specific subscales.

**Job Satisfaction**

Job satisfaction is measured by the composite score of the Job Descriptive Index (26). The JDI (see Appendix B, pp. 173-186) is a well-developed instrument which assesses an individual's perceptions on five work dimensions: the job itself, pay, promotion, supervision, and co-workers. Dunn and Stephens note that this instrument "has been shown to possess both high reliability and high validity" (11, p. 369). In a study of subjects \(N = 2,671\) ranging over a broad classification of demographics, Golembiewski and Yeager (12) report correlations between managerial vs. non-managerial (.94), wage vs. salaried (.95), white vs. black (.92), male vs. female (.95), and white females vs. white males (.95). They conclude that the JDI seems applicable to employees with different characteristics.

**Type A Personality**

One of the major research approaches to individual stress differences has concentrated on behavior patterns. Studies begun in the early 1960s and continuing through the present have shown a clear relationship between
behavioral patterns and the prevalence of CHD (9, p. 24). It is believed that behavior patterns, type A or B, will be moderator variables between stressors and resultant behavior. Those individuals scoring as type A should perceive greater stress and show greater dysfunctional behavior.

Vickers (28) has developed a nine-item rationalization of the Sales (25) instrument which will be used in this study (see Appendix B, pp. 173-186). The Vickers instrument is based upon the work of Sales (25) to differentiate between type A and type B behavioral patterns. Starting with 27 variables measured by 92 items, Sales used a group of students (N = 150) to pretest the instrument and eliminate low correlating items. Analysis resulted in the removal of 14 items and 3 variables. The refined instrument was then administered to employed men (N = 84). Inter-item correlations ranged from a low of .71 to a high of .63 and Sales notes that

The fourteen personality variables demonstrate a substantial amount of internal consistency. . . . This is true even in those cases in which the average inter-item correlation appears to be relatively low. . . . since scales with inter-item correlations with this magnitude still have quite high levels of overall consistency (25, p. 46).

Vickers used data collected by Caplan (7) to reduce the Sales instrument through factor analysis. This analysis yielded clusters of items. Vickers then used a computer program designed to select subsets of items from a
larger number which comprise a total scale in such a fashion that it maximizes the correlation between the subset and the overall scale score. The sample used was split in half and this type of analysis was run on each half of the sample. Results showed that six items served as good predictors for both of the halves of the sample. Three additional items were added as a result of the factor analysis of the Caplan data.

The completed nine-item scale was found to have good internal consistency (estimated alpha coefficient roughly .80) and a correlation with the scores of the total 49-item scale of .90. The use of this scale in a study by Caplan and others (8) involving over 2,010 respondents representing 23 occupational groups from 67 different sites or organizational affiliations revealed a cross-sectional estimate of reliability of 174. A mean score of 5.21 and standard deviation of 0.93 were found for a random sample of 310 drawn from the larger sample. The classification of administration indicated a mean of 5.92 for the entire sample.

**Marital Helping Relations**

Marital helping relations is a one-item measure attempting to ascertain the degree of informal spousal help in coping with stress. Using six Likert-type alternatives, this global evaluation has been shown to be
significantly related to a number of specific husband and wife helping behaviors (4, 5).

**Illness**

The variable illness represents an outcome measure (dependent) associated with stress. Prior research (7, 8, 9, 10, 14) has demonstrated a relationship between high levels of stress and various types of illness. For this study the variable illness is a measure of days missed from work due to illnesses of any kind. This measure relates more to the needs of the organization than to those of the individual. A person who is absent from work due to illness will not be highly productive on those days he is absent.

**Sample Characteristics**

The sample population for this study consists of mid-management employees for the customer service division of a large international airline company. The organization chosen for study maintains customer service departments in each airport that the company services; however, only domestic (United States) personnel were surveyed.

A total of 261 employees, as defined above, are stationed in 49 locations. Questionnaires were distributed to all targeted personnel with an attached cover letter (see Appendix A, pp. 171-172). Questionnaires were distributed through intercompany mail on May 2, 1980. A
cutoff date of May 21, 1980 was established to allow thirteen working days for respondents to fill out and return the questionnaire. Approximately 96 per cent of all questionnaire returns were received during the established thirteen-day period. Of the 261 questionnaires distributed, 113 were returned (43 per cent) of which 89 were usable (34 per cent).

Although a total of 89 usable questionnaires were returned, the response rate of 34 per cent warrants a word of caution concerning statistical inferences from the sample population. Inferences concerning research results obtained from a sample population to the population universe are subject to error. The greater the percentage of return, the less likely it is that error will occur. Usable returns were those where the subject indicated that he or she was married, and all sections of the questionnaire were completed.

The demographics of the sample are presented in Table I. A comparison of the distribution of sample characteristics with the known population characteristics, obtained from company records, indicates that a representative sample was obtained. Overall, the modal response indicates that the mid-level manager in this study is 31-40 years of age (43 per cent), is married (100 per cent of sample), is male (93 per cent), has two children
TABLE I
DEMOGRAPHIC DISTRIBUTION OF SAMPLE

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<td>15.7</td>
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<tr>
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<td>89</td>
<td>100.0</td>
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<table>
<thead>
<tr>
<th>Age of Youngest Child at Home</th>
<th></th>
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</thead>
<tbody>
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<td>27.0</td>
</tr>
<tr>
<td>1-5 years</td>
<td>17</td>
<td>19.1</td>
</tr>
<tr>
<td>6-18 years</td>
<td>38</td>
<td>42.7</td>
</tr>
<tr>
<td>19 years and above</td>
<td>10</td>
<td>11.2</td>
</tr>
<tr>
<td>Total</td>
<td>89</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Percentage totals do not add to 100 due to rounding.

(42 per cent) has an income of between $20,000 and $25,000 per year (44.9 per cent), and is a manager (41.6 per cent) in the company.

**Procedure for Missing Values**

In any survey research some of the variables being analyzed will contain missing values. This occurs because of omission on the part of the respondents. Missing values can be handled in a number of ways including deleting those
cases where missing values occur, ignoring missing values, and substituting missing values with the mean or mode value of that response (2, 10). When cases with missing values are deleted, the number of valid cases remaining may be quite small and the researcher has thus failed to make use of all data available. However, ignoring missing values can lead to statistics being computed with varying n's, possibly producing misleading statistical comparisons (16).

For the current research project, all responses were analyzed as to number of percentage of missing values for each variable in the questionnaire. Mean scores were then computed for each variable as well as the modal response. Since all variables are of a classificatory nature, the modal response was chosen for substitution of missing scores (2, 10). The validity of this procedure rests upon the assumption that there is no known reason for believing that respondents omitting an occasional variable would differ significantly in response from those who included that variable. Analysis of response indicates that less than 4 per cent of those selected for scoring had left out one or more item responses. The largest number of items omitted on any one questionnaire was four.
Questionnaire Scoring and Reliability

For five of the separate variable measures, questionnaire scoring was simply a matter of noting the response indicated by the subject and perhaps summing the response for an overall score. However, four of the measures required special handling, i.e., role conflict and ambiguity, job satisfaction, marital stress, and life events stress. This section will discuss the scoring procedures for each questionnaire section and report the overall score means and/or reliabilities found from the data analyzed in this study.

Family Stressors

This portion of the Recent Life Change Schedule was scored using the standard weights obtained from studies by Rahe (20, 21) and Stephens (14). Analysis of responses indicates that for the past two years, in six-month intervals, subjects experienced a mean family events stress of 19.5 for the time period 19-24 months ago, 20.47 for the time period 13-18 months ago, 15.8 for the time period 7-12 months ago, and 30.95 for the time period 0-6 months ago. For the past twelve months, determined by combining the two most recent time periods, subjects experienced a mean family events stress of 46.82.

It should be noted that the value for family events stress for the most recent six-month period is 1.51 to
1.95 times greater than those for the other six-month periods. Although no reason for the observed increase in scores is known, one likely explanation is that, as time passes, some stressful events are forgotten, thus resulting in a higher score for the most recent time period. It is also known that the company used in this research has been in considerable financial difficulty for an extended period. It might be possible that this work stress is reflected in family stress scores.

**Work Stressors**

The measure of work stressors was obtained from a different section of the same Recent Life Change Schedule that measured family stressors. Work stressors were scored using weights previously discussed (see Appendix C, pp. 187-189, for actual weights used). Analysis of responses indicates that for the past two years, in six-month intervals, subjects experienced a mean work events stress of 15.73 for the time period 19-24 months ago. For the time period 13-18 months ago the mean score was 23.93, for the time period 7-12 months ago the mean score was 20.34, and for the time period 0-6 months ago the mean score was 20.64. For the past twelve months, computed by adding the two most recent time periods, the mean score was 40.98.
Managerial Performance

This instrument was subjected to reliability analysis using Cronbach's alpha. With an $\alpha = .79$, internal consistency was deemed acceptable. For the entire sample population, managerial performance indicated a mean of 43.83 and a standard deviation of 6.54.

Due to the sensitive nature of some sections of the questionnaire both self and superior ratings were not obtained for this study. Therefore the convergent and discriminant validity procedures described by Heneman (13) were inappropriate for this study.

Work Group Supportiveness

For the present study internal consistency reliability, employing Cronbach's alpha, indicates a reliability of $\alpha = .84$. This reliability estimate corresponds closely with previously reported reliabilities ($\alpha = .78$).

The measure of work group supportiveness has been scored so that a score of one equals a perception of good or high work group support and a score of five indicates low or poor work group support.

Marital Stress

For this research the Marital Adjustment Inventory was subjected to evaluation using the SPSS subprogram Guttman Scale (16). Initial analysis indicated that the entire instrument was not a true scale, producing a
coefficient of reproducibility of .84 and of scalability of .25. A general guideline to interpretation of the coefficient of reproducibility is that a .9 or above is considered to indicate a valid scale with a coefficient of scalability of .5 or above.

Inspection of the Guttman scale indicated that most respondents were failing Item 1 (arguments about children), Item 3 (arguments about recreation), and Item 4 (arguments about use of house and furniture). It was thus concluded that these three items (1, 3, and 4) were not unidimensional and cumulative with the remainder of the scale, and they were dropped from further analysis.

The remaining six items (2, 5, 6, 7, 8, and 9) were subjected to Guttman analysis with a resulting coefficient of reproducibility of .94 and a coefficient of scalability of .59. It was concluded that these items (2, 5, 6, 7, 8, and 9) were a true scale, and they were subsequently scored as the marital adjustment variable. After scoring, a mean of 1.69 with standard deviation of .8 resulted. Scale types range from 0, indicating high marital adjustment, to 6, indicating low marital adjustment.

**Occupational Stress**

The responses to this section of the questionnaire were factor analyzed using an image covariance method and rotated using the varimax criterion (16, 23). Table II
TABLE II
ITEM, MEAN, STANDARD DEVIATION, AND FACTOR SCORES FOR ROLE CONFLICT AND ROLE AMBIGUITY FROM SURVEY DATA

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Factor I</th>
<th>Factor II</th>
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</thead>
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<td>2</td>
<td>5.03</td>
<td>1.74</td>
<td>-.18</td>
<td>.63*</td>
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<tr>
<td>3</td>
<td>3.24</td>
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<td>.19</td>
<td>-.30</td>
</tr>
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<td>4</td>
<td>4.83</td>
<td>1.57</td>
<td>-.05</td>
<td>.60*</td>
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<td>5</td>
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<td>6</td>
<td>3.83</td>
<td>2.03</td>
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<td>30</td>
<td>3.11</td>
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<td>.30</td>
<td>-.26</td>
</tr>
</tbody>
</table>

*Items selected for scoring.

presents item means, standard deviations, and rotated factor structures. Two factors were extracted which account
for 50.3 per cent of the common variance of the 30-item set. These factors closely resemble those found by Rizzo and his colleagues (23) and were named role conflict and role ambiguity, respectively.

Only those items loading .30 or better were chosen for scoring (see Table II). Of the fifteen role conflict items, eight are represented with loadings greater than or equal to .30. Among the remaining seven items, two items (17, 29) loaded primarily on factor II, role ambiguity; two items (9, 3) were complex or lower-loading items; and three items (1, 7, 15) loaded in the predicted direction but with a low magnitude.

Factor II was named role ambiguity. Of the fifteen role ambiguity items, six loaded at .30 or greater to represent this factor. Among the remaining nine items, three items (6, 14, 30) loaded primarily on factor I, two items (22, 28) were complex loading items, and four items (8, 10, 18, 24) loaded in the expected manner but with low magnitude.

Scoring for this portion of the questionnaire was accomplished by selecting only those items that loaded at .30 or greater on the rotated factors and were not complex loading items. Items selected for scoring are shown by asterisks in Table II. Factor items were summed and averaged to produce a role conflict score. Factor II items were reflected (response of 7 changed to 1,
6 to 2, etc.), summed, and averaged to produce a score for role ambiguity. Scores for both factors were then summed to produce an overall score for perceived job stress.

Analysis of scores indicated that respondents had a mean role conflict score of 4.11 with standard deviation of 1.3. Role ambiguity scores for respondents indicated a mean of 3.21 with standard deviation of 1.32. The mean and standard deviation for overall job stress perception were 7.33 and 2.29, respectively. Cronbach's alpha (17, 20) for items selected for role conflict was \( \alpha = .833 \), for items selected for role ambiguity was \( \alpha = .856 \), and for overall job stress was \( \alpha = .649 \).

The scores for role ambiguity and role stress were combined additively for the remaining analysis of the data gathered for this research. An overall score of occupational stress, which combines the scores for role ambiguity and role stress, was chosen for several reasons. It was felt that an overall indication of occupational stress would provide greater insight into the interaction between family and work. Correlations were computed between all the variables in this research project with role ambiguity, role conflict, and the overall measure of occupational stress. The correlations between role conflict, role ambiguity, and occupational stress with the remaining variables were generally similar with only minor variations. It was felt that the overall
measure of occupational stress was as good as and, in some cases, a better indicator of family and work interaction than either the measure or role conflict or role ambiguity alone. Additionally, the abovementioned Cronbach's alphas for role conflict, role ambiguity, and the combined scores indicate that role conflict and role ambiguity are relatively independent functions of work-related stress. The combination of role conflict and role ambiguity thus provides a more complete indication of occupational stress than either measure used alone.

**Job Satisfaction**

Individual items within the Job Descriptive Index were scored using the standard scoring weights developed by Smith and others (26). Scored items were then summed to produce scores for the job itself, pay, promotion, supervision, co-workers, and an overall score of job satisfaction. For this study the items comprising the JDI instrument resulted in a Cronbach's alpha (16, 19) of .92.

**Type A Personality**

For this study the measure of type A behavior was subjected to internal consistency reliability using Cronbach's alpha (16, 20). The type A scale was found to have good internal consistency (alpha = .63). For the population of this study a mean score of 22.7 and a standard deviation of 6.68 were found.
Marital Helping Relations

Analysis of the results of this instrument indicate a positive \( r = .277 \) and significant \( p = .004 \) (1) relationship between marital helping behavior and arguing behavior. As arguing behavior increases, or marital satisfaction decreases, there is a corresponding decrease in marital helping relations. The positive relationship occurs due to scoring. Marital helping behavior is scored so that one equals a perception of high helping behavior and six equals a perception of low helping behavior. These results are consistent with previous research (5).

Illness

Analysis of the data from this study for this one-item measure indicated that 76.4 per cent of the respondents missed no work days due to illness in the previous six months. This high incidence of no work days missed could indicate that the population was very healthy or that subjects continued working even though ill. A more sensitive measure of illness might have been more appropriate.

Summary

Chapter III has discussed the methodological procedures designed to test the hypotheses of this study. Nine variables, other than demographics, have been identified and instruments to collect data on those variables
discussed. Questionnaires were pretested and indicated that adequate data could be collected. Questionnaires were then distributed through intercompany mail to mid-managers in the customer service department of a large international airline. Demographics indicate that a representative sample was obtained.

Each portion of the questionnaire was analyzed and scored using the method appropriate to that section. Analysis indicates that reliable data were obtained from the sample population.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

TESTS OF THE HYPOTHESES

Introduction

The hypotheses of this study, as stated in Chapter I, concern the structural relationships among independent variables associated with the family environment, the work environment, and type A behavior, and the dependent job- and illness-related variables. The complex hypothesized relationships between all of the variables investigated in this study can now be tested by segregating the originally proposed model (Figure 6) into four separate models.

![Diagram of hypothesized relationships]

Fig. 6--Hypothesized relationships

The first model concerns the hypothesized relationships between the independent variables of work and family
stressors, marital helping behavior, work group support, occupational stress, and marital stress. The second model concerns the relationships between the independent variables and the dependent variable of job productivity. The relationship between the dependent variable of job satisfaction and the independent variable is the focus of the third model. The last model to be investigated studies the relationships between the independent variables and illness. Each of the above hypothesized models is discussed in detail following a short section on the method of analysis.

Method of Analysis

To begin the analysis of the results of this study, hypotheses were first rewritten in testable form and grouped according to the model each hypothesis was designed to investigate. Hypotheses were then tested according to the appropriate statistical procedure and the results analyzed. Following the testing of the hypotheses a zero order correlation matrix of all variables was developed and analyzed. The correlation analysis was designed to further investigate relationships not originally hypothesized and thus make the resulting models more complete.

The data gathered for this study have been subjected to analysis using the Statistical Package for the Social Sciences (14). Hypotheses tests have been conducted using
the appropriate statistical technique of either Pearson's Product Moment correlation coefficient \((1, 2, 12, 15)\) or multiple regression analysis \((1, 7, 11, 12, 14, 20)\). The use of either Pearson's correlation or multiple regression requires that certain assumptions about the data be made and tested. Since both statistical techniques require basically the same assumptions, only those assumptions concerning multiple regression (which are more rigorous) are discussed here.

**Assumptions**

The use of multiple regression procedures as a valid statistical technique rests upon three assumptions concerning the data being analyzed. The first assumption is that the data are drawn from a normally distributed random sample. For this study questionnaires were distributed to all members of the research population. It is assumed that a random sample of the research population returned completed questionnaires. Additionally, responses from a reasonably large sample help assure a normal distribution \((1)\).

The second assumption of multiple regression is that all relationships are linear and additive. The linearity of relationships was examined through the use of scatterplots. In instances where bivariate relationships did not indicate a linear relationship, non-linear relationships
were also not apparent. For this research, all relationships are assumed to be additive; there is no theoretical reason to assume that non-additive relationships exist.

The third assumption is that there is a homogeneity of variance. This assumption was tested with the direct examination of residuals (12, 14). Scatterplots of all multiple regression analyses for this research indicated relative freedom from abnormalities and homogeneity of variance (12).

Although not an assumption of multiple regression, there is a question of the number of cases required versus the number of variables in the regression equation. It is generally suggested that very large samples should be used (12). Edwards (7) suggests that the minimum number of observations divided by the number of variables (n/variable) be equal to or greater than ten. Thorndike (20) suggests that the number of observations be equal to or greater than the number of variables squared plus 50 ($V^2 + 50$). For this research, the largest number of variables employed in any one regression analysis was five. It was thus concluded that the sample size, while not large, was sufficient for the test of the hypotheses. However, the sample was not large enough to include more than four independent and one dependent variable in the multiple regression analysis.
General Structural Hypotheses

The first model and associated hypotheses to be tested pertain to the relationships between the variables associated with the work environment and the variables associated with the family environment. The work environment variables include work stressors, work group support, and occupational stress (see Figure 7). The family environment variables are family stressors, marital helping behavior, and marital stress. The tests of each of the hypotheses associated with the first model (hypotheses three, four, six, and seven) are discussed below.

Fig. 7--General hypothesized structural model

Hypothesis Three

Hypothesis three was originally stated as a relationship existing between occupational stress and marital stress. For this study the measure of occupational stress is one of role conflict and role ambiguity (RLCLAM), and the measure of marital stress is one of arguing behavior (MARSAT). A Pearson's Product Moment (1, 2, 14, 19) correlation coefficient indicates that \( r = .0334 \) and is
significant at the $p = .378$ level. The null hypothesis $H_0$, that there is no relationship between the variables RLCLAM and MARSAT, is accepted.

The test of hypothesis three indicates no isomorphic effect between perceived stress in the work place and perceived stress in the family. This lack of association tends to show that occupational stress (role conflict and role ambiguity) does not increase or decrease the amount of perceived marital stress; nor does marital stress affect occupational stress. These perceptions of the work environment and the family environment are separated by the individual.

**Hypothesis Four**

The fourth hypothesis to be tested in this study states that a relationship exists between work group support and marital helping behavior. The null and alternate hypotheses become:

$H_0$: There is no relationship between WKGSUP and MHB.

$H_1$: There is a relationship between WKGSUP and MHB.

A Pearson's Product Moment correlation coefficient indicates that $r = .2678$ and is significant at the $p = .006$ level. However, partial correlation procedures indicate that partialing out the effects of job satisfaction on marital helping behavior and work group support results in a correlation coefficient of $r = .14$, $p = .08$. A
spurious relationship between MHB and WKGSUP is indicated, and the null hypothesis is accepted.

The test of this hypothesis also indicates a lack of isomorphism between family and work as far as perceived helping behavior and work group support are concerned. The amount of perceived work group support does not vary with the amount of helping behavior received at home. Hypothesis three and hypothesis four indicate a separation between work and family, as far as these specific variables are concerned.

**Hypothesis Six**

The original intent of hypothesis six was to determine if a structural relationship exists between work stressors, work group support, and occupational stress. This hypothesis can now be restated as:

\[ H_0: \text{There is no linear relationship between the dependent variable occupational stress (RLCLAM) and the independent variables work stressors (LESW1YR) and work group support (WKGSUP).} \]

\[ H_1: \text{There is a linear relationship between the dependent variable RLCLAM and the independent variables LESW1YR and WKGSUP.} \]

Occupational stress is indicated as a dependent variable in this hypothesis for the sake of statistical analysis but is considered to be independent in the overall
model of stress. The above hypothesis was analyzed using multiple regression procedures (11, 12, 14). Analysis of the results of the multiple regression (Table III) indicates that a significant ($p < .001$) multiple linear relationship exists between the variables of work stressors, work group support, and occupational stress.

**TABLE III**

MULTIPLE REGRESSION WITH RLCLAM DEPENDENT

| Multiple R | .577 |
| R Square   | .33292 |

<table>
<thead>
<tr>
<th>Analysis of Variance</th>
<th>DF</th>
<th>F</th>
</tr>
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<tbody>
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</tr>
<tr>
<td>Residual</td>
<td>86</td>
<td>$p &lt; .001$</td>
</tr>
</tbody>
</table>

The null hypothesis is rejected and the alternate hypothesis is accepted, suggesting that a reasonably strong relationship exists between the work environment variables. The degree of interaction indicates that both work stressors and work group support explain 33 per cent of the variance of perceived occupational stress. The perception of occupational stress is somewhat dependent upon both events that occur at the work place and the perceived degree of supportive behavior of others in the work environment.
Hypothesis Seven

Hypothesis seven, as originally written, states that a relationship exists between family stressors, marital helping behavior, and marital stress. This hypothesis can now be restated in testable form as:

$H_0$: A multiple, linear relationship does not exist between the dependent variable marital stress (MARSAT) and the independent variables of family stressors (LESFA1YR) and marital helping behavior (MHB).

$H_1$: A multiple, linear relationship exists between the dependent variable MARSAT and the independent variables of LESFA1YR and MHB.

Multiple regression procedures were used to analyze and test this hypothesis (12, 14). The resulting analysis (Table IV) indicates a weak but significant ($p < .025$) relationship between the variables of marital stress, family stressors, and marital helping behavior.

<table>
<thead>
<tr>
<th>TABLE IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>MULTIPLE REGRESSION WITH MARSAT DEPENDENT</td>
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</tbody>
</table>

| Multiple R | .29606 |
| R Square   | .08765 |
| Analysis of Variance | DF | F |
| Regression  | 2  | 4.13117 |
| Residual    | 86 | $p < .025$ |
For hypothesis seven the null hypothesis is rejected and the alternate hypothesis is accepted. A relationship between the variables in the family environment exists, although not as strong a relationship as that between the variables in the work environment. The combination of family stressors and marital helping behavior was able to explain only 8 per cent of the variance in marital stress. Although the relationship between the family environment variables is significant, other factors also contribute to the perception of marital stress.

**Structural Independent Variable Model**

The tests of hypotheses three, four, six, and seven studied the interrelationships between the independent variables associated with the family environment and the work environment. For these tests, it appears that there is a significant relationship between the variables in the work place, and a significant relationship between the variables in the family. However, the hypothesized relationships between the variables of the work environment and the family environment did not exist (Figure 8). For the population under study, from the results of the hypotheses tests, it appears that work and family are perceptually separated by the individual. The creation and reduction of stress in the family does not affect the creation and reduction of stress in the work place.
The results of the present study tend to support the research of others concerning the interactions of the variables in the work place (4, 5) and concerning the interaction of the variables in the family (6, 8). The concept that the family and work mode of interaction tends to be isomorphic was not supported. Instead, as Rapoport and Rapoport note, "The evidence suggests . . . that complementarity is seldom practiced, and the general human tendency is to segregate spheres of involvement" between work and family (16, p. 386).

Overall, the hypothesized interactions between the variables of the work place and the variables of the family were only partially supported. These hypotheses, however, concern only part of the proposed model. Of perhaps more interest is the relationship between the work and family variables and the associated job and illness outcome variables. The following section discusses the relationships between outcomes and the variables of the
family environment, the work place, and type A behavior patterns.

Tests of Outcome Hypotheses

Three hypotheses were formulated to test the relationship between outcomes and type A behavior, the family, and work (see Figure 6, p. 96). Hypotheses one, two, and five are complex hypotheses which have been decomposed and analyzed relevant to each of the three output variables. The first model developed and tested concerned the relationship between the independent variables and performance. Second to be tested and discussed is the relationship between the independent variables and job satisfaction. Illness is the third outcome model to be tested and analyzed.

Job Performance

One of the more important job outcomes to both the organization and the individual is the level of job performance. The job performance model hypothesizes a relationship between work environment stress, family environment stress, type A behavior, and managerial performance. Hypothesis one tests the relationships between the work environment, type A behavior, and performance; and hypothesis two tests the relationships between the family environment, type A behavior, and managerial performance. Hypothesis five tests the relative strength
of relationships between occupational stress, marital stress, and job performance.

**Hypothesis one: performance.**--The null and alternate hypotheses to test the performance portion of hypothesis one concern the relationships between job performance (dependent variable) and the independent variables work stressors, work group support, occupational stress, and type A behavior.

\( H_0 \): There is no linear relationship between the dependent variable \( \text{PERFI} \) and the independent variables of \( \text{LESWYR}, \text{WKGSUP}, \text{RLCLAM}, \text{and TYPEA} \).

\( H_1 \): There is a linear relationship between the dependent variable \( \text{PERFI} \) and the independent variables of \( \text{LESWYR}, \text{WKGSUP}, \text{RLCLAM}, \text{and TYPEA} \).

Results of the regression analysis (Table V) indicate a significant \( (p < .05) \) linear, overall multivariate relationship. It therefore appears that the interaction between stress in the workplace and type A behavior is related significantly to the level of perceived performance of the individual. However, only a small portion of the variance in job performance (12.4 per cent) is explained by the linear relationships tested by the above hypothesis.

**Hypothesis two: performance.**--Hypothesis two investigates the interactions between the variables associated with the family (family stressors, marital helping behavior,
TABLE V
MULTIPLE REGRESSION WITH PERFI DEPENDENT

<table>
<thead>
<tr>
<th></th>
<th>DF</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>4</td>
<td>2.99241</td>
</tr>
<tr>
<td>Residual</td>
<td>84</td>
<td>p &lt; .05</td>
</tr>
</tbody>
</table>

and marital stress), type A behavior, and job performance and is stated in testable form as:

H₀: There is no linear relationship between the dependent variable PERFI and the independent variables of LESFALYR, MHB, MARSAT, and TYPEA.

H₁: There is a linear relationship between the dependent variable PERFI and the independent variables of LESFALYR, MHB, MARSAT, and TYPEA.

Multiple regression analysis for the overall relationship of the dependent variable with the independent variables (Table VI) indicates that a weak but significant (p < .05) relationship exists. The null hypothesis is rejected and the alternate hypothesis (H₁) is accepted, indicating that family-induced stress and marital helping behavior are able to explain 11.7 per cent of perceived managerial performance. For the specific variables under
TABLE VI
MULTIPLE REGRESSION WITH PERFI DEPENDENT

<table>
<thead>
<tr>
<th>Multiple R</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>.342</td>
<td>.117</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis of Variance</th>
<th>DF</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>4</td>
<td>2.78296</td>
</tr>
<tr>
<td>Residual</td>
<td>84</td>
<td>p &lt; .05</td>
</tr>
</tbody>
</table>

investigation, the family is almost as important in explaining job performance as is work-related stress.

Hypothesis five: performance.--Tests of hypothesis one and hypothesis two have indicated significant linear relationships between the work environment and perceived performance, and between the family environment and perceived performance. Hypothesis five is more specific and investigates the relative strength of relationships between occupational stress and performance, and marital stress and performance.

To investigate job performance, the original hypothesis five stated that occupational stress will account for a greater portion of variance in job productivity than will marital stress. The testable null and alternate hypotheses are:

H₀: RLCLAM will not account for a greater portion of variance in PERFI than MARSAT.
$H_1$: RLCLAM will account for a greater portion of variance in PERFI than MARSAT.

In this study an analysis of the Pearson's Product Moment correlation coefficient and associated levels of significance for each variable pair is sufficient to test hypothesis five. If Pearson's $r$ value is squared, it becomes a measure of the proportion of variance in one variable explained by the other variable. Additionally the levels of significance for $r$ and $r^2$ remain the same and indicate whether a true linear relationship exists.

A correlation matrix of occupational stress, marital stress, and job productivity (Table VII) indicates that only marital stress is significantly related to job performance. Inspection of the scatterplot of occupational stress with job productivity indicated no curvilinear relationship which, according to current thought (13), might have occurred.

**TABLE VII**

PERFORMANCE AND STRESS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Occupational Stress (RLCLAM)</th>
<th>Marital Stress (MARSAT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Productivity (PERFI)</td>
<td>$r = -0.0659$</td>
<td>$r = 2.666$</td>
</tr>
<tr>
<td></td>
<td>$p = .270$</td>
<td>$p = .006$</td>
</tr>
</tbody>
</table>
The positive relationship between marital stress and job productivity indicates that, as perceived stress in the family increases, perceived job productivity also increases. It appears likely that a circular effect occurs which may start either with increased difficulties in the family, which drive the individual toward expending more time and energy on the job, or the demands of the job (time and energy) result in deteriorating interpersonal relationships within the family. Whatever the cause, once the cycle begins it builds upon itself, family stress increases, and the individual becomes more productive at work.

**The Performance Model: Hypothesis**

In general the performance model, as hypothesized, tested out to be true. There is a significant linear relationship between the variables of work stressors, work group support, occupational stress, type A behavior, and performance (Figure 9). Additionally a significant linear relationship was also observed between the variable of family stressors, marital helping behavior, marital stress, type A behavior, and perceived job performance. However, no relationship was found between occupational stress and performance, while a significant relationship was found between marital stress and performance.

The test of the structural relationship between the independent variables indicated that stress in the family
was not related to stress in the work place. However, the family environment does exhibit a relationship with the important job outcome of productivity. The direction of the relationships indicated by the Beta values from the multiple regression for hypothesis two shows that the individual perceiving high performance is perceiving greater marital stress, exhibits type A behavior, perceives slightly more marital helping behavior, and has somewhat fewer family stressors.

From the results of the regression analysis of hypothesis one, the individual perceiving high performance is also more likely to exhibit type A behavior, perceive high work group support, and also to have slightly more occupational stress and a higher incidence of work stressors. Overall, the high performer is a type A individual and experiences higher levels of stress in both the family and work environment, but also perceives greater support from both the family and the work group.

Fig. 9--Performance model

<table>
<thead>
<tr>
<th>Work Stressors</th>
<th>Work Group Support</th>
<th>Occupational Stress</th>
<th>Type A Performance Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Stressors</td>
<td>Marital Helping</td>
<td>Marital Stress</td>
<td>Behavior</td>
</tr>
</tbody>
</table>
Job Satisfaction

The second job outcome model to be investigated relates to the outcome of job satisfaction. The hypothesized relationships between the work environment, the family environment, type A behavior, and job satisfaction are the same as those hypothesized in the previous job productivity model. Hypothesis one investigates the relationships between the work environment, type A behavior, and job satisfaction. Hypothesis two examines the relationships between the family environment, type A behavior, and job satisfaction, and hypothesis five investigates the relative strength of relationships between occupational stress, marital stress, and job satisfaction.

Hypothesis one: job satisfaction.--The model relating the work environment to job satisfaction hypothesizes that a linear relationship exists between the dependent variable of job satisfaction and the independent variables of type A behavior, occupational stress, work group support, and work stressors. The testable null and alternate hypotheses are:

$H_0$: There is no linear relationship between the dependent variable JDIOVALL and the independent variables of LESWLYR, WKGSUP, RLCLAM, and TYPEA.

$H_1$: There is a linear relationship between the dependent variable JDIOVALL and the independent variables of LESWLYR, WKGSUP, RLCLAM, and TYPEA.
Results of the regression analysis (see Table VIII) indicate a significant ($p < .001$) multiple, linear relationship. $H_0$ is rejected and the alternate hypothesis is accepted. The multivariate procedure used to test hypothesis one indicates that the work environment variables and type A behavior account for 63 per cent of the variance in job satisfaction. The step-wise multivariate procedure employed indicated that occupational stress explained the greatest portion of variance in job satisfaction, followed by work group support, then type A behavior, and work stressors last. The direction of relationships with job satisfaction, shown by the Beta values, indicates that the individual who is highly satisfied with his job perceives lower occupational stress and perceives lower work stressors, but is also likely to perceive a high degree of work group support and exhibit type A behavior patterns.

**TABLE VIII**

MULTIPLE REGRESSION WITH JDIOVALL DEPENDENT

| Multiple R  | .793 |
| R Square    | .630 |

<table>
<thead>
<tr>
<th>Analysis of Variance</th>
<th>DF</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>4</td>
<td>35.78756</td>
</tr>
<tr>
<td>Residual</td>
<td>84</td>
<td>($p &lt; .001$)</td>
</tr>
</tbody>
</table>
Comparing the results of the tests of hypothesis one for both job performance and job satisfaction, some characteristics of the individual emerge. The individual who indicated both high performance and high job satisfaction perceived strong support from the work group and was a type A personality. However, if the person also indicated high occupational stress and high work stressors, that individual was productive but not as satisfied.

Conversely, the individual who indicated type B behavior (non-type A) and perceived low work group support was a poor performer under conditions of low work stress, or was not satisfied under conditions of high stress.

A complex relationship is indicated between the work stress variables and the outcomes of productivity and job satisfaction. The remaining portion of the job satisfaction model deals with the family and family stress.

**Hypothesis two: job satisfaction.**--The second hypothesis investigating the job satisfaction model states that a multiple linear relation exists between the dependent variable of job satisfaction and the independent variables of family stressors, marital helping behavior, marital stress, and type A behavior. Hypothesis two is written in testable form as:

\[ H_0: \text{There is no linear relationship between the dependent variable JDIOVALL and the independent variables of LESFA1YR, MHB, MARSAT, and TYPEA.} \]
H₁: There is a linear relationship between the dependent variable JDIOVALL and the independent variables of LESFALYR, MHB, MARSAT, and TYPEA.

Multiple regression analysis indicates that no overall significant relationship exists between the dependent and independent variables; therefore, the null hypothesis is accepted as written. Apparently the individual is able to differentiate the work environment and the family environment, as far as job satisfaction is concerned. Job satisfaction is composed of factors found only on the job. Table IX presents the results of the multiple regression analysis for this hypothesis.

TABLE IX
MULTIPLE REGRESSION WITH JDIOVALL DEPENDENT

<table>
<thead>
<tr>
<th>Analysis of Variance</th>
<th>DF</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>4</td>
<td>1.59025</td>
</tr>
<tr>
<td>Residual</td>
<td>84</td>
<td>Not.sig.</td>
</tr>
</tbody>
</table>

For the model of job satisfaction proposed, only those variables associated with the work environment are included. The step-wise multiple regression procedure indicates that of the family variables, marital helping
behavior explains the largest amount of variance in job satisfaction, but even marital helping behavior is not significant. The final hypothesis investigates the relationships between occupational stress, marital stress, and job satisfaction.

Hypothesis five: job satisfaction.--Hypothesis five tests the specific relationships between occupational stress and job satisfaction, and between marital stress and job satisfaction. The original hypothesis states that occupational stress will account for a greater portion of variance in job satisfaction than will marital stress. The null and alternate hypotheses are:

\[ H_0: \text{RLCLAM will not account for a greater portion of variance in JDIOVALL than will MAR-SAT.} \]

\[ H_1: \text{RLCLAM will account for a greater portion of variance in JDIOVALL than will MARSAT.} \]

A correlation matrix of Pearson's Product Moment is sufficient to test this hypothesis (Table X). Results indicate that only occupational stress is significantly related to job satisfaction and in fact accounts for 51.7 per cent of the variance in job satisfaction. The null hypothesis is rejected and the alternate hypothesis
is accepted. Variance in job satisfaction originates at the work place, and the family environment contributes almost nothing to job satisfaction.

**TABLE X**

**JOB SATISFACTION AND STRESS**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Occupational Stress (RLCLAM)</th>
<th>Marital Stress (MARSAT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Satisfaction</td>
<td>( r = -0.7192 ) p = .001</td>
<td>( r = 0.0086 ) p = .468</td>
</tr>
</tbody>
</table>

**The Job Satisfaction Model: Hypothesis**

The general model for job satisfaction, employing variables from both the work environment and the family environment, plus type A behavior, tested only partially true. The family environment variables indicated no relationship with job satisfaction and were thus dropped from the model (Figure 10). The results of the hypotheses tests of job satisfaction indicate, then, a separation between work and family as far as job satisfaction is concerned. Previous research on the relationships between the family environment and the work environment is limited but has indicated a relationship between the family and job satisfaction.

In 1969, Ridley (17, 18) found that working men exhibited a positive and significant \( p > .01 \) relationship
between job satisfaction and marital adjustment. This study did not confirm Ridley's results. No correlation was found between job satisfaction and marital adjustment (marital stress). Reasons for the divergent finding might be in the use of a different measuring instrument (Job Descriptive Index vs. the Bullock Scale of Job Satisfaction) or in the quite different sample populations.

Burke and Weir (3) studied the interrelationships between job stress, life stress, marital helping behavior, marital satisfaction, and job satisfaction among engineers and chartered accountants in the province of Ontario, Canada. They found that married men who were more satisfied with the amount of marital helping behavior received were also more satisfied with their jobs, lives, and marriages. Results of this study indicate no relationship between marital helping behavior and job satisfaction.

There are many possible reasons why this study does not confirm previous research on the work, family, and job satisfaction relationship. Methodology and instrumentation undoubtedly contributed to divergent results, yet it is also possible that different populations
exhibit different work-family relationships. Perhaps the dual working spouses in the Ridley study and the chartered public accountants in the Burke and Weir study are more likely to take their work home and thus have a higher degree of work-family interaction than the mid-level managers of this study. The degree of saliency of the job may also be a factor in job satisfaction (16).

**Illness**

Considerable research has been conducted on the stress outcomes of illnesses (3, 4, 5, 9, 10). Generally the research has shown a strong relationship between high levels of stress and the onset of many types of illnesses. Under conditions of continually high stress levels, such symptomatic illnesses as ulcers, alcoholism, and cardiovascular disease have been observed. The measure of illness employed in this study is one which assesses the number of days of work missed due to illnesses of any kind. Although not as sensitive a measure as one which indicates various types of illnesses, the number of days missed from work is important to the organization.

The original model for illness hypothesized relationships between the work environment, the family environment, type A behavior, and the outcome illness. Hypotheses one, two, and five test the relationships between variables.
Hypothesis one: illness.—The intent of hypothesis one is to investigate the structural relationships between the dependent variable of illness and the independent work environment variables of work stressors, work group support, occupational stress, and type A behavior. Hypothesis one is written in testable form as:

\[ H_0: \text{There is no linear relationship between the dependent variable } \text{DAYSMISS}\text{ and the independent variables of } \text{LESWLYR}, \text{WKGSUP, RLCLAM, and TYPEA}. \]

\[ H_1: \text{There is a linear relationship between the dependent variable } \text{DAYSMISS}\text{ and the independent variables of } \text{LESWLYR}, \text{WKGSUP, RLCLAM, and TYPEA}. \]

The analysis of data to test the first hypothesis (see Table XI) indicates that there is no significant \( (p = .05 \text{ or better}) \) linear relationship between the dependent variables for illness \( (\text{DAYSMISS}) \) and work-related independent variables. For the present study the null hypothesis is accepted, indicating that for the individual

<table>
<thead>
<tr>
<th>TABLE XI</th>
</tr>
</thead>
<tbody>
<tr>
<td>MULTIPLE REGRESSION WITH DAYSMISS DEPENDENT</td>
</tr>
</tbody>
</table>

| Multiple R | 0.299 |
| R Square   | 0.089 |
| Analysis of Variance | DF | F |
| Regression | 4 | 2.16519 |
| Residual   | 84 | \( p < .10 \) |
the amount of work stress does not predict the number of days missed from work. This result does not mean that the population under study does not exhibit symptomatic stress-related illnesses. However, these results might indicate that subjects with minor illnesses do continue to work.

**Hypothesis two: illness.**—The model for illness also hypothesized a relationship between the family environment and illness. Hypothesis two is written to determine if a multiple linear relationship exists between the dependent variable of illness and the independent variables of family stressors, marital helping behavior, marital satisfaction, and type A behavior. The testable null and alternate hypotheses are:

\[ H_0: \text{There is no linear relationship between the dependent variable of } \text{DAYSMIS} \text{ and the independent variables of LESFA1YR, MHB, MARSAT, and TYPEA.} \]

\[ H_1: \text{There is a linear relationship between the dependent variable of } \text{DAYSMIS} \text{ and the independent variables of LESFA1YR, MHB, MARSAT, and TYPEA.} \]

The test of the hypothesis using multiple regression analysis (Table XII) indicates that a multiple linear relationship does not exist; the null hypothesis is therefore accepted. For the population under study, the family environment does not contribute to the number of days of work missed. Apparently it does not matter whether
TABLE XII
MULTIPLE REGRESSION WITH DAYS MIS DEPENDENT

| Multiple R | 0.224 |
| R Square   | 0.050 |

<table>
<thead>
<tr>
<th>Analysis of Variance</th>
<th>DF</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>3</td>
<td>1.5088</td>
</tr>
<tr>
<td>Residual</td>
<td>85</td>
<td>Not sig.</td>
</tr>
</tbody>
</table>

interpersonal relationships with the family are stressful or not; the individual will continue to work.

From the tests of hypotheses one and two, it appears that the number of days missed due to illness has no relationship with either work environment stress or family environment stress. Hypothesis five tests the relationships between two specific variables and illness.

Hypothesis five: illness.--The remaining hypotheses concerning illness investigate the ability of either occupational stress or marital stress to explain the variance in illness. The hypotheses to test the above relationships are:

H₀: RLCLAM will not account for a greater portion of variance in DAYS MIS than will MARSAT.

H₁: RLCLAM will account for a greater portion of variance in DAYS MIS than will MARSAT.
The bivariate correlation sufficient to test hypothesis five (Table XIII) indicates that only marital stress is significantly related to illness, and the null hypothesis is accepted. There is a relationship between marital stress and illness, although the relationship is weak and the amount of variance explained is small (3.6 per cent). However, there is an indication that as marital stress increases, the number of days missed due to illnesses also increases.

**TABLE XIII**

**ILLNESS AND STRESS**

<table>
<thead>
<tr>
<th>Variable (DAYSMIS)</th>
<th>Occupational Stress (RLCLAM)</th>
<th>Marital Stress (MARSAT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illness</td>
<td>( r = .0168 ) ( p = .438 )</td>
<td>( r = .1906 ) ( p = .037 )</td>
</tr>
</tbody>
</table>

**The Illness Model: Hypothesis**

Illness was originally hypothesized to exhibit relationships between the work environment, the family environment, and type A behavior. Results of the hypotheses tests indicate, however, that the model was not accurate. The only relationship that was observed from the tests of the hypotheses occurred between marital stress and illness.

The literature relating stress with illness has consistently indicated a strong relationship between illness
and stress (3, 4, 5, 9, 10). However, illness has not been defined as absences from work due to illness. It is therefore possible that the expected relationship would not emerge if the individual in the population under study continued working, even though minor onsets of symptomatic stress illnesses did occur. However, the relationship between marital stress and illness (absences) does suggest that family-related stress is more conducive to absences than is work-related stress.

Summary of Hypotheses Tests

At the initiation of this study seven hypotheses were presented for testing (see pp. 22-23). Of those seven hypotheses, two were accepted, three were both partially accepted and partially rejected, and two were rejected.

Hypothesis one was both partially accepted and partially rejected. A linear relationship was noted between the outcomes of job satisfaction and perceived job performance with the independent work variables of occupational stress, work group support, work events stress, and type A behavior. However, no relationship was noted between illness and the independent work variables.

Hypothesis two was also both partially accepted and partially rejected. A linear relationship was noted between the job outcome variable of performance and the family variables of family events stress, marital helping
behavior, marital stress, and type A behavior. No relationship was found, however, between family variables and job satisfaction or illness.

Hypothesis three was rejected. No relationship was found between occupational stress and marital stress. Hypothesis four was also rejected. An original correlation between marital helping behavior and work group support was found to be a spurious relationship, if the effects of job satisfaction were controlled for.

Hypothesis five was both partially accepted and partially rejected. Occupational stress accounted for a larger portion of the variance of job satisfaction than did marital stress. However, marital stress accounted for a larger portion of the variance in both perceived job performance and illness than did occupational stress.

Hypothesis six and hypothesis seven were both accepted. These two hypotheses tested relationships between (1) the work environment variables and (2) the family environment variables. The test of hypothesis six indicated a significant linear relationship between the work variables of work events stress, work group support, and occupational stress. The test of hypothesis seven demonstrated a significant linear relationship between the family variables of family events stress, marital helping behavior, and marital stress.
The results of the hypotheses tests have indicated the structural relationship between the work environment variables, the family environment variables, type A behavior, job outcomes, and illnesses. Three initial outcome models were developed and tested by the hypotheses.

The relationships between the work environment variables, and the relationships between the family environment variables, were accepted as hypothesized. Additionally the relationships between the work environment variables, type A behavior, and performance were accepted as hypothesized. Also accepted as hypothesized were the relationships between the family environment variables, type A behavior, and performance. The hypothesized relationship between occupational stress and marital stress was rejected and is not included.

The test of the model for job satisfaction indicated that only the work environment portion of the model was valid. The family environment variables were thus dropped from the model. The individual seems to associate job satisfaction with factors found only on the job and is able to separate family and work from the outcomes of job satisfaction.

The only observed relationship with illness, as a result of the hypotheses tests, occurred between illness and marital stress. Hypothesis five indicated a weak but significant \( r = .19, p = .037 \) relationship between the
amount of perceived marital stress and the number of days of work missed. The direction of the relationship was in the expected direction, indicating that those individuals perceiving greater marital stress also missed more days of work.

Chapter IV has analyzed the results of the hypotheses tests by outcome models. Chapter V presents the results and analyses of the correlations between all variables included in this study. Presentation and analysis of correlation results will follow the same pattern in Chapter V as that used in Chapter IV.
CHAPTER BIBLIOGRAPHY


CHAPTER V

RESULTS AND ANALYSES OF CORRELATIONS

Introduction

Chapter IV presented the results of the tests of the hypotheses designed to answer specific questions about the model of work-family interaction. The hypotheses of the study, however, represent only a partial analysis of the data gathered as part of this research. Chapter V presents the results and analyses of the correlations of all the variables pertinent to the study and investigates still further the various models tested in Chapter IV.

The correlation analysis presented in this chapter comprises all of the variables incorporated in the original work-family model. Included are the work-related variables of work stressors, work group support, and occupational stress and the family-related variables of family stressors, marital helping behavior, and marital stress. Additionally, the individual difference variable of type A behavior is included as well as the outcomes of job productivity, job satisfaction, and illness.

Health Stressors and Demographics

Not included in the original model but analyzed in this chapter is the variable measuring health stressors
and the demographic variables collected for this study. The measure of health stressors represents a portion of the Rahe-Holmes (10, 11) life events stress measure identified as health (see Appendix B, pp. 173-186).

The health portion of the life events questionnaire asks respondents to indicate (in six-month intervals) if they have had (1) an illness or injury which kept them in bed a week or more, or took them to the hospital; (2) a major change in eating habits; (3) a major change in sleeping habits; or (4) a change in their usual type and/or amount of recreation.

These questions were scored using the weights developed by Rahe (11) and totaled for each six-month period. In addition, the two most recent six-month intervals were summed to provide a measure for life events stress for one year. Analysis of this measure indicates the means and standard deviations shown in Table XIV. The measure employed in the correlation analysis indicates the intensity of health-related stress events for 0-12 months ago and is a composite of the scores for health events stress for 0-6 months and 7-12 months ago.

The demographic data gathered for this study included age, education, income, number of children, marital status, job title, and age of youngest child at home (see Appendix B, pp. 173-186). The demographic questions were used to differentiate between various
sample populations, with marital status used to cull out unmarried respondents. The demographic question pertaining to job title indicated the level of the respondent within the management hierarchy, used company titles, and was scored as director = 1, manager = 2, and assistant manager = 3. Director indicated the highest mid-level management position.

**Method of Presentation and Analysis**

Initially a Pearson's Product Moment correlation coefficient and a degree of significance were calculated for all variable pairs of the model. Variable pairs were then subjected to first, second, third, and, if appropriate, fourth order partial correlations (1, 2, 3). Partial
correlation indicated that several highly correlated bi-variate pairs were in fact spurious correlations.

Marital helping behavior initially indicated high correlation with work group support ($r = .26$, $p < .01$), occupational stress ($r = .22$, $p < .05$), and job satisfaction ($r = -.24$, $p < .01$). However, partial correlation procedures indicated that, when controlling for the effects of job satisfaction, the correlation between marital helping behavior and work group support was reduced to $r = 14$ with $p = .08$, a reduction of 46 per cent and from significant to non-significant. When controlling for both work stressors and job satisfaction, the correlation between marital helping behavior and occupational stress was reduced to $r = .04$ with $p = .33$, a drop of 82 per cent, and became non-significant. Additionally, if the effects of both occupational stress and work group support are controlled for, the correlation between marital helping behavior and job satisfaction becomes $r = -.049$ with $p = .325$, a drop of 80 per cent, and becomes non-significant.

Two other spurious relationships also occurred. When controlling for the effects of work stressors and job satisfaction, the correlation between occupational stress and work group support ($r = .53$, $p < .001$) becomes $r = .13$ with $p = .09$, a drop of 75 per cent, and becomes non-significant. The final spurious relationship occurs between work stressors and job satisfaction ($r = -.17$,
p < .05), when the effects of occupational stress are controlled. For this last variable pair, r becomes equal to .0091 with p = .466, a drop of 95 per cent, and becomes non-significant.

The resulting correlation matrix, after spurious correlations have been replaced, is presented in Table XV. The correlations between the variables, included in the original model, have been analyzed by the outcome variables of job productivity, job satisfaction, and illness. This type of analysis lends itself to ready comparison to the originally developed model and to the results of the hypotheses tests.

The correlations between demographics and between demographics and the variables of the model will be discussed in a later section. The following section analyzes the correlations among the variables of the model beginning with the outcome job productivity, job satisfaction, and finally illness.

Job Productivity: Correlations

The original model of job productivity hypothesized a relationship between the variables of the work environment, the variables of the family environment, type A behavior, and perceived job productivity. Results of the hypotheses tests tended to support the model as hypothesized.
### TABLE XV

**VARIABLES OF THE MODEL**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
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<td>Family Stressors</td>
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<td>...</td>
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<td>Marital Helping Behavior</td>
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<td>...</td>
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<td>...</td>
<td>...</td>
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<td>Marital Stress</td>
<td>-.08</td>
<td>.27*</td>
<td>1.00</td>
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<td>.18*</td>
<td>.03</td>
<td>1.00</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
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</tr>
<tr>
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<td>.14</td>
<td>.17</td>
<td>.08</td>
<td>1.00</td>
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<td>...</td>
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</tr>
<tr>
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<td>-.03</td>
<td>.25*</td>
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<td>Type A Behavior</td>
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<td>-.23*</td>
<td>-.16</td>
<td>-.15</td>
<td>-.05</td>
<td>1.00</td>
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<td>...</td>
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</tr>
<tr>
<td>Job Productivity</td>
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<td>.01</td>
<td>-.20*</td>
<td>-.06</td>
<td>-.23*</td>
<td>1.00</td>
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<td>.28*</td>
<td>.18</td>
<td>.23</td>
<td>.16</td>
<td>-.18*</td>
<td>.06</td>
<td>-.10</td>
<td>1.00</td>
<td>...</td>
</tr>
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<td>.05</td>
<td>.03</td>
<td>.39†</td>
<td>1.00</td>
</tr>
</tbody>
</table>

\( N = 89 \)

*\( p < .05 \)

*\( \hat{p} < .01 \)

†\( p < .001 \)
Assuming the perception of job productivity is the outcome of the interaction among the remaining variables of the model, it can be seen from Table XV that three variables correlate significantly ($p < .05$) with job productivity. The three variables of work group support, type A behavior, and marital stress are the only variables that correlate directly with job productivity.

Work group support is scored so that one equals a high perception of support and five equals a low perception of support. The direction of the correlation between work group support ($r = -.29$, $p < .05$) and job productivity (negative) indicates that as the degree of supportive behavior perceived in the work place increases, job productivity also increases. In previous research O'Reilly (9) found no correlation between work group support and decision-making performance among eligibility workers at a county welfare agency. Apparently, for the population of this study, a supportive environment is more conducive to productive behavior.

The second variable correlating significantly with job productivity is type A behavior ($r = -.23$, $p < .05$). The type A individual is one who is viewed as having a chronic sense of time urgency, a hard-driving and competitive orientation, and a striving for achievement. The negative correlation indicates that the type A behavior individual also perceives himself as more productive.
Marital stress is the third variable to correlate directly with job productivity \((r = .26, p < .01)\) and indicates a positive relationship. As the individual perceives a more stressful environment in the family, he also perceives himself to be more productive on the job. This does not imply that the family causes variation in job productivity, nor does it imply that the job causes family stress. It is possible, however, that a circular relationship might exist between marital stress and job productivity.

Although the variables discussed above were the only three variables that directly correlated with job performance, further analysis of the correlations indicated the possibility of a more complex structural arrangement existing among the variables of the family and work environment. In addition to the correlations with job productivity, there was also an observed correlation between marital stress and type A behavior. However, marital stress did correlate with marital helping behavior (the only other independent variable correlation with marital stress besides type A behavior). Marital helping behavior in turn correlated with only one other independent variable, that of work stressors. Work stressors in turn correlated with the two other independent variables of family stressors and occupational stress.
The Correlation Model

The correlations discussed above seem to indicate a pattern of interrelationships between work variables and family variables and the outcome of perceived job performance (Figure 11). The directions of the correlations shown in Figure 11 help clarify some of the relationships between variables.

![Correlation Diagram]

Fig. 11--The correlations among variables associated with the outcome of performance and r values

Marital stress correlates negatively with type A behavior. This correlation indicates that the type A individual also experiences more marital stress. The correlation between marital stress and marital helping behavior suggests that high levels are associated with low perceived marital helping behavior.

Marital helping behavior correlates with one other variable, work stressors ($r = .18$, $p < .05$). This relationship suggests that high incidence of work-related stressors is associated with low perceived helping behavior.
in the family. The relationship between marital helping behavior and work stressors is similar to that between marital helping behavior and marital stress.

It is possible that as the need for supportive behavior from the family is increased (i.e., high stress conditions), the individual does not perceive the supportive behavior that occurs as adequate. On the other hand, it is also possible that marital helping behavior moderates the perception of marital stress; thus those reporting high helping behavior also reported less marital stress. Burke and Weir (3) found similar results in their study of engineers and accountants. However, the relationship between work stressors, which are actual events, and marital helping behavior indicates that the actual helping behavior may remain constant but that the perception of the helping behavior becomes less satisfactory as stress increases. It may be that the perception of marital helping behavior is not a moderator of stress but, rather, an outcome of stress.

Marital helping behavior was seen to correlate with work stressors. Work stressors, in turn, correlated with occupational stress ($r = .25, p < .01$) and family stressors ($r = .40, p < .001$). The correlation between work stressors and occupational stress would seem to indicate that the individual with an ambiguous work role perception also experienced more work-related problems. Additionally,
the correlations between work stressors and family stressors indicated that stressful events that occurred in one environment (i.e., work or family) would also occur in the other environment.

The relationship between work stressors and family stressors was further analyzed by correlating the stressors for each environment by corresponding time period (Table XVI). The correlations indicated that the strongest relationships occurred during the same time periods, except for the time period 19-24 months ago. However, it should also be noted that two of the family stress time periods (13-18 months ago and 7-12 months ago) also correlated with their previous six-month time period for work-related stress events. A time series relationship such as this suggests a weak causal link between work events stress and family events stress six months later. The causal link is, however, too tentative to be conclusive and a strong circularity of relationships is also indicated.

Summary of Job Performance: Correlations

The analysis of the correlations has further clarified the relationships between the work environment, the family environment, type A behavior, and perceived job productivity. The results of the test of hypothesis one indicated a multiple linear relationship between work stressors, work group support, occupational stress, type
TABLE XVI

LIFE EVENTS STRESS: FAMILY AND WORK
BY TIME

<table>
<thead>
<tr>
<th>Work Stressors Time Periods</th>
<th>Family Stressors Time Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19-24 mo.</td>
</tr>
<tr>
<td>19-24 mo.</td>
<td>.16</td>
</tr>
<tr>
<td>13-18 mo.</td>
<td>-.04</td>
</tr>
<tr>
<td>7-12 mo.</td>
<td>-.12</td>
</tr>
<tr>
<td>0-6 mo.</td>
<td>-.07</td>
</tr>
</tbody>
</table>

N = 89

*p < .05

* p < .01

† p < .001

A behavior, and job productivity. From the correlations of the work environment, only work group support was significantly related to job productivity. However, work group support is able to explain only 4 per cent of the variance of job productivity while the multiple work relationship was able to explain 12.4 per cent of the variance. Yet work group support is undoubtedly the most important of the variables studied explaining job productivity.

Type A behavior correlated with job productivity and marital stress as predicted but not with occupational stress. Type A behavior does not appear to be a factor
in occupational stress but does contribute to the explanation of marital stress and productivity.

The family portion of the performance model was similar to that found by the test of the hypothesis. Marital stress correlated with type A behavior, job productivity, and marital helping behavior. If a high degree of marital helping behavior moderates the effects of stress as suggested by Burke and Weir (3), it would also tend to reduce the productivity of the individual on the job. Evidently a certain amount of stress—in this study stress from the family—is conducive to higher levels of job productivity.

A relationship between family stressors and marital helping relations did not occur as might have been indicated by the hypothesis test. However, a significant relationship did occur between marital helping behavior and work stressors. If marital helping behavior is a moderator for stress, it is more likely to moderate the effects of work stressors and not family stressors.

Work stressors correlate with occupational stress and family stressors. The relationship between work stressors and occupational stress seems logical if one assumes that an individual with an ambiguous work role perception is more likely to experience difficulties on the job. However, the correlation between work stressors and family stressors is somewhat more complex.
The high degree of correlation between work and family stressors signifies that as stress events occur in one environment, they also occur in the other environment. Further analysis also indicates that health stress events are correlated with both family stressors and work stressors. Although not a conclusion of this study, previous research (4, 5, 7) has shown a weak causative relationship between stress and ill health.

Overall the correlations indicate a significant interaction between the work environment, the family environment, type A behavior, and perceived job productivity. Additionally the correlations have helped clarify the structural relationship between the variables of the job productivity model. Finally, the highly productive individual is more likely to exhibit type A personality traits and perceive both high work group support and high marital stress.

Job Satisfaction: Correlations

The results of the hypothesis test indicated that only the work environment was significantly related to job satisfaction. A multiple linear relationship was observed between work stressors, work group support, occupational stress, type A behavior, and job satisfaction.

The results of the correlation analysis indicate that only two variables (occupational stress and work
group support) were significantly correlated with job satisfaction. Neither work stressors nor type A behavior correlated with job satisfaction; however, work stressors did correlate with occupational stress (Figure 12).

<table>
<thead>
<tr>
<th>Work Stressors</th>
<th>Occupational Stress</th>
<th>Job Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25</td>
<td>-0.71</td>
<td></td>
</tr>
<tr>
<td>Work Group Support</td>
<td>-0.65</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 12—Correlation relationships between the outcome variable of job satisfaction and the work and family environment variables.

The directions of the relationship between occupational stress and job satisfaction indicate that the highly satisfied individual experiences low occupational stress. Since occupational stress is defined as role conflict and ambiguity, the highly satisfied individual perceives a clear work role. The direction of the relationship between work group support (scored so that one equals high support) and job satisfaction also shows that the highly satisfied individual perceives high support from the work group. The negative direction of the relationship between work group support and job satisfaction results from the scoring of work group support. Work group support was scored so that one equaled high work group support. Reflecting the scores would have resulted
in a positive relationship; however, the correlation coefficient would remain the same.

Overall it appears that, for this study, a high proportion of the variance in job satisfaction is explained by the work environment. If any relationship between job satisfaction and the family environment occurred, it would be through the relationship between work stressors and family stressors. However, the impact of family stressors and the other family environment variables does not contribute significantly to job satisfaction.

As noted in Chapter IV (pp. 119-120), Burke and Weir (3) and Ridley (12, 13) found significant relationships between marital stress, marital helping behavior, and job satisfaction. This study is not supportive of their findings. Apparently the mid-level managers of this study view job satisfaction differently than did the subjects of previous research.

The outcome model for illness is discussed in the next section. Following the section on illness the demographic correlates will be discussed.

Illness: Correlations

The results of the hypothesis test of the model for illness resulted in only one variable (marital stress) indicating a significant relationship with illness. Analysis of the correlation of the model variables
indicated that one other variable originally included in the model (work group support) also correlated significantly with illness (Figure 13).

![Correlation Diagram](image)

**Fig. 13--Correlations related to illness**

From the relationships between work group support, marital stress, and illness it is apparent that high levels of marital stress and low levels of work group support are associated with increases in absences due to illness. As marital stress increases the individual is more likely to be absent from work. However, work group support seems to moderate the effects of marital stress. An individual is more likely to be absent from work if a low level of work group support is perceived.

In a previous discussion of the job productivity model, it was noted that marital stress correlated with marital helping behavior which then correlated with other variables in the model. The remaining relationships with marital stress are not included in the correlation model. Multiple regression used to analyze the effects of the family environment indicates that marital helping behavior was not significantly related to the multiple
relationship of marital stress and illness. Therefore marital helping behavior and the other variables indicating a relationship with marital helping behavior have been omitted from the correlation model.

Although not originally part of the illness model, the correlation results show a strong relationship between health stressors and illness. As expected, an increase in health stressors is related to increases in absences due to illness.

Health Stressors: Correlations

The measure of health stress events was not included in the original model. However, previous research (2, 3, 5, 6, 7) has consistently shown a relationship between stress and ill health. The measure of health events stress is noted to correlate significantly with family stressors and work stressors as well as with marital stress, work group support, and type A behavior.

The measures for work, family, and health stressors assess the relative impact of events upon an individual. The correlations between these three stress events show that as work and family stressors increase so do health stressors.

Health stressors additionally correlated with three other variables. The relationship with work group support, marital stress, and type A behavior indicates that the individual experiencing high amounts of health
stressors is a type A personality, has higher marital stress, and perceives low work group support. This relationship found between health stressors and the work and family tends to support the work of Cooper and Marshall (4, 5), Henry and Stephens (7), and Rahe (10, 11) concerning the impact of stress and type A personality upon ill health.

Demographics: Correlations

Data on seven demographic characteristics were gathered as part of the current research project. Correlations among demographics (see Table XVII) show that younger employees are better educated with less income and fewer children. There is also a strong correlation between incomes and job titles, indicating that those higher in the organization receive more income and that those having higher income also have more children. There was no relationship shown between education and income, education and job title, or age and job title. Apparently each level of hierarchy, as represented by job title, is populated by a variety of age and education levels.

The correlations between demographics and variables of the model (Table XVIII) show no relationships between any of the variables of the model and education, marital status, number of children, and age of youngest child at
TABLE XVII
DEMOGRAPHICS

<table>
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<th>Demographic Characteristics</th>
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<th>Income</th>
<th>Job Title</th>
<th>Number of Children</th>
<th>Age of Youngest Child at Home</th>
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<td>.22+</td>
<td>-.18+</td>
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N = 89
*p < .05
†p < .001
### TABLE XVIII

**DEMOGRAPHICS AND VARIABLES OF THE MODEL**

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<td>-.13</td>
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<td>.01</td>
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<td>-.05</td>
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<td>.09</td>
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<td>.30*</td>
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<td>.05</td>
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<td>.30*</td>
<td>.24*</td>
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<td>.08</td>
<td>.01</td>
<td>.07</td>
<td>.01</td>
<td>.08</td>
<td>.00</td>
<td>.15</td>
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<tr>
<td>Age of Youngest Child at Home</td>
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<td>.06</td>
<td>.13</td>
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<td>.02</td>
<td>-.25</td>
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<td>-.02</td>
<td>.04</td>
</tr>
</tbody>
</table>

N = 89  
* p < .05  
° p < .01  
† p < .001
The lack of correlations between the number of children and the age of the youngest child at home indicates that the absence or presence of children does not affect the level of stress or stress outcomes of the individual. Gadourek (6) found that the number of children was slightly associated with absences from work, a finding not supported by the present research.

The demographic variables that show significant correlations with some of the variables of the model are age, income, and job title. Generally the age variable indicates that the younger employee experiences more family and work stressors, experiences less marital stress, and is likely to exhibit type A behavior patterns.

Correlations with income indicated that those individuals in lower income groups perceived less work group support, perceived less marital helping behavior, were less satisfied, and indicated less job productivity. Those individuals who both were younger and had less income were experiencing significantly more problems in both the family environment and the work environment, were less productive, and were less satisfied with their jobs.

Correlations between job title and the variables of the model indicate much the same relationship as above. This occurred because those with less income were also in lower hierarchical positions in the
organization. Individuals who indicated lower job positions also indicated less work group support, higher occupational stress, and less job productivity, and were less satisfied. The correlation between job title and occupational stress showed that younger employees at lower level jobs do not have a clear perception of their role in the work place.

The variable of job title did not correlate with any of the family environment variables; however, both age and income did correlate with the family environment. Although not a conclusion of this study, it would seem that age is a determinant of job title which is in turn a determinant of the level of income.

Summary of Correlations

Chapter V has presented an analysis of the correlations between the variables of the present study. The correlations of the variables of the model were first analyzed by job outcome and illness. The demographic correlations were then presented and analyzed.

The analysis of the correlations tends to support and clarify the relationships tested in Chapter IV. Correlations with job performance exhibit a complex structure of relationships between the variables of the family environment, the work environment, type A behavior, and perceived job productivity. For the purposes of this study
a significant relationship was shown between perceived job performance and the family environment. Increased stress in the family environment was related to increased job productivity. Additionally, significant relationships were indicated between work stressors, family stressors, and marital helping behavior. For the population of this study there appeared to be a significant overlap between the family and the job as far as productivity was concerned.

Job satisfaction, however, was related only to variables associated with the work environment. Family stress and marital helping behavior did not contribute in explaining the variance of job satisfaction. That the individual is able to separate family and job satisfaction is contradictory to previous research. As was noted previously, perhaps different populations or different degrees of saliency in the job resulted in divergent results.

Illness was observed to correlate with variables from both the work environment and the family environment. As marital stress increased, the number of days absent from work also increased. However, as the perception of work group support increased, the number of days absent decreased. It may be that work group support acts as a moderating variable between marital stress and absences.

The variable for health stressors correlated with variables from the family environment, the work environment, and type A behavior. The relationships with health
stresses support the current thinking regarding stress and illness.

Correlations among the demographic variables and between the demographic variables and the variables of the model added additional insight to the study. Overall it was noted that younger employees in lower job positions and earning less income experience significantly more work and family stress and indicate lower job performance and less job satisfaction.

Chapter IV has presented the results of the hypotheses tests and Chapter V has presented the correlation analysis. Chapter VI will summarize the study, combine the results of both the hypotheses tests and correlation analyses, present conclusions, and recommend further studies.


CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The application of the systems concept to the individual, the family, and the organization predicts that these three systems will interact in such a manner that events in one system will correlate with events in the other systems. The purpose of this study is to investigate one area of system interaction, that of stress creation and stress outcomes.

A search of the literature revealed very little empirical research pertaining to the interaction between the family environment and the work environment and job outcomes. However, from the literature available on the individual, the family, the work place, and stress, a model of work-family interaction was developed. The model of work-family interaction hypothesized a number of specific relationships between variables within and between the family environment, the work environment, type A behavior, the job outcomes of perceived productivity and satisfaction, and the stress outcomes of illness.

To test the hypothesized relationships of the work-family model a questionnaire was developed and distributed
via intercompany mail to mid-level managers of the customer service division of a large international airline. The returned questionnaires (N = 89) were scored and analyzed using appropriate statistical techniques.

The data gathered as part of this study were used to test the relationships between the variables of the work-family model. The original model was decomposed into three separate outcome models, one model for perceived job productivity, one model for job satisfaction, and one model for illness. The hypotheses of the study were then applied to each model and statistically tested. The hypotheses of the study were then applied to each model and statistically tested. The hypotheses tests resulted in the redefinition of each model and clarified the structural relationship between variables.

Following the hypotheses tests, correlations between variables were analyzed. Correlations were analyzed by the outcomes of job performance, job satisfaction, and illness. Each of these analyses resulted in models which, although similar to the models resulting from the tests of the hypotheses, indicated relationships not previously hypothesized.

The results of the hypotheses tests, and the results of the correlation analysis, produced two models for each outcome variable. The following sections integrate the models previously developed and discussed. One composite
model is presented for each of the outcomes of perceived job productivity, job satisfaction, and illness. Conclusions are drawn for each model and implications for personnel management are discussed.

Integration of Models

The three integrated models presented in this section represent the results of the tests of the hypotheses and the correlation analysis. The first model presented is that for the outcome of perceived job productivity. This model is followed by the model for job satisfaction, which is in turn followed by the model for illness. The figures representing each of the three models show both the strong relationships between variables (solid lines) and the weak relationships between variables (dashed lines). Conclusions from the study, which pertain only to the defined population and are not meant to be generalized, are given following each model.

Perceived Job Productivity

The analysis of the data collected for the present study indicates that the model for job productivity is a complex of interrelationships among both the family environment and the work environment. The results of the hypotheses tests indicate that a multiple linear relationship exists between the dependent variable of job productivity and the independent variables of type A
behavior, occupational stress, work group support, and work stressors. The step-wise multiple regression procedure and the correlation analysis further clarified the work environment portion of the model (see Figure 14). Both work group support and type A behavior correlated significantly with job productivity, but not with each other. A weak relationship is therefore indicated between work group support and type A behavior. Additionally, a significant correlation was found between work stressors and occupational stress but not between occupational stress and work group support. A weak relationship is shown between work group support and occupational stress in the model.

![Diagram of job productivity](image)

*Fig. 14--Job productivity*

The family environment also showed a multiple linear relationship between job productivity and type A behavior, marital stress, marital helping behavior, and family stressors. Correlation analysis and the step-wise multiple regression analysis indicated that a weak
relationship exists between marital helping behavior and family stressors but that work stressors are significantly related to both family stressors and marital helping behavior.

For the population of this study it can be concluded that:

1. From the work environment, work group support shows the greatest degree of correlation with job productivity.

2. Marital stress indicates the greatest degree of correlation with job productivity from the family environment.

3. For the outcome of job productivity there are low but significant relationships between work stressors, family stressors, marital helping behavior, and occupational stress.

4. Generally, the individual who perceives high job productivity is a type A personality, perceives high work group support, and perceives high marital stress.

Job Satisfaction

The results of the analysis of the data of this study indicate a relationship between job satisfaction and the work environment, but not between job satisfaction and the family environment. Correlations indicated a significant relationship between type A behavior and marital
stress. Also indicated by correlation analysis were relationships between work stressors, family stressors, and marital helping behavior. However, without an indication of a multiple linear relationship between the family environment and job satisfaction, it was felt that the variables of the family environment were not significantly related to job satisfaction to be included in the model.

The resulting model, after dropping the family environment, reflects the multiple relationships between job satisfaction and the work environment (see Figure 15). Type A behavior was a weak but significant factor in the multiple relationship, but did not correlate with job satisfaction. Strong relationships are indicated between work stressors, occupational stress, work group support, and job satisfaction.

<table>
<thead>
<tr>
<th>Work Stressors</th>
<th>Occupational Stress</th>
<th>Work Group Support</th>
<th>Job Satisfaction</th>
</tr>
</thead>
</table>

Fig. 15--Job satisfaction

It can be concluded from the results of this study that job satisfaction is not related to the family environment. The perception of job satisfaction appears to originate almost entirely from the job with little family influence. The concept of differentiation
between work and family appears to be valid for job satisfaction but not for job productivity.

From the work environment, work group support exhibits the strongest relationship with job satisfaction, followed by occupational stress. The highly satisfied individual indicated high work group support, little occupational stress, and few work stressors. This job satisfaction relationship contrasts with the model for job productivity. Both the highly satisfied individual and the highly productive individual experienced greater stress than the satisfied individual. Work stress and family stress may be conducive to increased job productivity, but not to job satisfaction.

The personnel manager should realize that the perception of job satisfaction emanates almost entirely from the work place. Within the work environment work group support is important to job satisfaction. Careful monitoring of the level of job satisfaction and perceived work group support would indicate areas within the organization where intervention may be necessary. However, it may not be necessary or particularly desirable to maintain a highly satisfied work force. High satisfaction indicates low stress levels; yet high stress was indicative of high productivity. It would appear that a balance between stress, satisfaction, and performance should be achieved and maintained.
Illness

The measure for illness (days missed due to illness) showed no multiple relationship with either the family environment or the work environment. Tests of the hypotheses did indicate a significant correlation between illness and marital stress. Furthermore, correlation analysis indicated a relationship between illness and work group support (see Figure 16).

![Illness Diagram](image)

Fig. 16--Illness

Although both marital stress and work group support are related to several other variables, without an indication of multiple linear relationships, those other variables are eliminated from the model.

Conclusions drawn from the analysis of the outcome illness are that:

1. Both the family environment and the work environment do have limited significant relationships with illness.

2. Those individuals who indicate less illness (absences) also indicate greater work group support.

3. The greater the perceived marital stress, the more likely an individual is to be absent due to illness.
From the analysis of the data, work group support is the single most significant variable indicating relationships with all three outcomes. It appears that a highly supportive work environment is indicative of high job productivity, high satisfaction, and little illness. Marital stress was the single most important variable from the family environment and indicates that high marital stress is related to both high productivity and higher levels of illness.

No causality has been assumed or hypothesized among the variables in this study. It seems entirely possible that a circular relationship exists between work and family. For instance, data collected for this study indicate a relationship between performance and marital stress. Does this indicate that the striving for greater performance leads to increased marital stress, or do high levels of marital stress drive an individual away from the family and towards work?

Implications of the Study for Personnel Management

Stress in the family environment has been shown to exhibit a significant relationship with both job productivity and absences from work due to illnesses. For the personnel professional, knowledge of the family-work relationship and the use of that knowledge in decision-making is the most fundamental and important implication. Most
good managers know and understand their subordinates. Most successful managers know the differences between employees with regard to job satisfaction, motivation, reaction to new job assignments, and a host of other characteristics. Yet it is also possible that many managers expect their subordinates to separate family life and work life.

The personnel professional needs to make other managers aware of the work-family relationship. With awareness managers will be able to make more appropriate decisions regarding their subordinates and themselves. This study indicates that some stress in the family is related to increased productivity. Yet it is also likely that prolonged levels of high stress can result in dysfunctional behavior. For the family this may mean divorce, for the individual ill health, and for the organization decreased productivity.

From an organizational perspective the personnel manager may monitor the levels of stress throughout an organization with the use of repeated measures. Work group support should also be monitored. In work settings where stress is high and work group support is low, some type of intervention may be appropriate. For everyone in the organization, training in stress (including the family) and stress management would seem appropriate. Awareness of stress and training in stress management
would need to be structured so that employees could find their individual balance between work stress, family stress, productivity, satisfaction, and illness.

Also indicated by this study is the importance of communications and support in the work place. Work group support was the only variable significantly related to all three outcomes. This does not mean that good work group support will lead to less perceived stress, more job productivity, or increased satisfaction. Yet, it does appear that the perception of support from the work group is important. Good work group support can be fostered by training in human relations and interpersonal communications.

Suggestions for Further Research

The results of this study indicate some interface between the family system and the work system for the population studied. Of particular interest are the relations between work stressors, marital helping behavior, marital stress, type A behavior, and job performance. Additional studies are suggested to answer the following questions:

1. What is the cause and effect relationship between marital stress and job performance?

2. What is the cause and effect relationship between work stressors and family stressors?
3. Is there any difference in the impact of the family upon work when both spouses are employed?

4. What is the relationship among work and family for different populations, e.g., blue collar, top management, different industries, different occupations?

5. Do working women perceive the same relationships among variables as men?

It is suggested that similar studies be undertaken to study diverse populations and to gather data from larger samples. Larger samples would allow researchers to use more sophisticated statistical procedures such as path analysis to further clarify cause and effect. Additionally, longitudinal studies using the same subjects and repeated measures would further clarify the impact of the family upon work behavior.
APPENDIX A

QUESTIONNAIRE COVER LETTER
Dear Directors/Managers:

The attached questionnaire is designed to measure your perceptions associated with your job as well as off-the-job activities that might affect your work. By completing this questionnaire and returning it to me, you will help me gather the data I need to finish four years of graduate study leading to the Ph.D. in Business Administration with a major in Personnel Administration and Industrial Relations.

This research project has been reviewed and approved by Mr. Michael P. Carey, Vice President Customer Service and is being coordinated by Ms. Linda Ingraham, Manager Customer Service Personnel. The questionnaire will take you approximately thirty minutes to complete. When you begin the questionnaire, have as few interruptions as possible. Upon completion, please mail it to me in the envelope provided.

Anonymity of response is completely guaranteed. The Customer Service Department will receive only composite data. This data and a copy of the completed dissertation will remain in the Customer Service Personnel Office should you want to see them.

I hope that the results of this study will aid in the further understanding of work behavior and contribute to the professional management literature. For your time, your effort, and your cooperation, I am most grateful.

Sincerely,

John K. Ross III
College of Business
North Texas State University
Denton, Texas 76203
APPENDIX B

MANAGEMENT BEHAVIOR AND PERCEPTION
RESEARCH QUESTIONNAIRE
Confidential: The use of this questionnaire is limited to research purposes only. Replies are strictly confidential. Any other use is expressly forbidden.

General Instructions: This questionnaire is separated into several different sections. Please read the instructions for each section carefully then proceed to answer that section. If there are no specific instructions please indicate your answer in the appropriate place. Please answer each question as truthfully and as accurately as you can.

Demographics: Place a check in the appropriate blank.

1. Age: _____ 20 or less  _____ 21-30  _____ 31-40  _____ 41-50  _____ 51-60  _____ 61+
2. Sex: Male  Female
3. Educational level (years completed): _____ 1-12  _____ 13-14  _____ 15-16  _____ 17  _____ 18  _____ 19+
4. Marital status: _____ married  _____ divorced and remarried  _____ divorced and not remarried  _____ not married
5. Income from your present position: _____ less than $10,000 per year  _____ $10-$15,000  _____ $15,001-$20,000  _____ $20,001-$25,000  _____ $25,001-$30,000  _____ $30,001-$35,000  _____ $35,001 and above
6. Organizational level of present position: _____ director  _____ manager  _____ assistant manager
7. Number of children: _____ 0  _____ 1  _____ 2  _____ 3  _____ 4 or more
8. Age of youngest child living at home: _____ 1-5  _____ 6-18  _____ 19+
9. Approximately how many days of work have you missed due to illness of any kind during the last six months: _____ 0  _____ 1-2  _____ 3-5  _____ 6-9  _____ 9+

Please go to next page...
Here are the nine self-descriptive questions. Any answer which describes the way you feel or act is the right one to give. Remember that you may use any of the seven response categories.

Answer quickly rather than making a long decision on each question. Of course, if you want to think out some answers, feel free to do so. However, it is your first impressions which are the most important. Remember you will not be identified with your answers.

1. I hate giving up before I am absolutely sure that I am licked.

   1 2 3 4 5 6 7
   Very true Never very true
   of me nor very untrue
   of me Not at all

2. Sometimes I feel that I should not be working so hard, but something drives me on.

   1 2 3 4 5 6 7
   Very true Never very true
   of me nor very untrue
   of me Not at all

3. I thrive on challenging situations. The more challenges I have the better.

   1 2 3 4 5 6 7
   Very true Never very true
   of me nor very untrue
   of me Not at all

4. In comparison to most people I know, I am very involved in my work.

   1 2 3 4 5 6 7
   Very true Never very true
   of me nor very untrue
   of me Not at all

5. It seems as if I need thirty hours a day to finish all the things I am faced with.

   1 2 3 4 5 6 7
   Very true Never very true
   of me nor very untrue
   of me Not at all

6. In general, I approach my work more seriously than most people I know.

   1 2 3 4 5 6 7
   Very true Never very true
   of me nor very untrue
   of me Not at all

7. I guess there are some people who can be nonchalant about their work, but I am not one of them.

   1 2 3 4 5 6 7
   Very true Never very true
   of me nor very untrue
   of me Not at all

8. My achievements are considered to be significantly higher than those of most people I know.

   1 2 3 4 5 6 7
   Very true Never very true
   of me nor very untrue
   of me Not at all

9. I have often been asked to be an officer of some group or groups.

   1 2 3 4 5 6 7
   Very true Never very true
   of me nor very untrue
   of me Not at all

The statement listed below and on back will describe some specific characteristics about your particular job. They will appear as follows:

<table>
<thead>
<tr>
<th>Job Characteristic</th>
<th>(A) How True?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Having enough time to complete my work.</td>
<td>[ ]</td>
</tr>
<tr>
<td>2. Knowing what my responsibilities are.</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

For each Job Characteristic, you are asked to give a rating, use the following rating scales:

For Column (A): Rate how true the characteristic is of your particular job.

<table>
<thead>
<tr>
<th>Definitely NOT TRUE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely TRUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>of my job</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>of my job</td>
</tr>
</tbody>
</table>

Read each characteristic, and select the scale number that best reflects your opinion. Enter the number you selected in the appropriate column.

<table>
<thead>
<tr>
<th>Job Characteristic</th>
<th>(A) How True?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have enough time to complete my work.</td>
<td>[ ]</td>
</tr>
<tr>
<td>2. I feel certain about how much authority I have.</td>
<td>[ ]</td>
</tr>
<tr>
<td>3. I perform tasks that are too easy or boring.</td>
<td>[ ]</td>
</tr>
<tr>
<td>4. Clear, planned goals and objectives for my job.</td>
<td>[ ]</td>
</tr>
<tr>
<td>5. I have to do things that should be done differently.</td>
<td>[ ]</td>
</tr>
<tr>
<td>6. Lack of policies and guidelines to help me.</td>
<td>[ ]</td>
</tr>
<tr>
<td>7. I am able to act the same regardless of the group I am with.</td>
<td>[ ]</td>
</tr>
<tr>
<td>8. I am corrected or rewarded when I really don't expect it.</td>
<td>[ ]</td>
</tr>
<tr>
<td>9. I work under incompatible polices and guidelines.</td>
<td>[ ]</td>
</tr>
<tr>
<td>10. I know that I have divided my time properly.</td>
<td>[ ]</td>
</tr>
<tr>
<td>11. I receive an assignment without the manpower to complete it.</td>
<td>[ ]</td>
</tr>
<tr>
<td>12. I know what my responsibilities are.</td>
<td>[ ]</td>
</tr>
<tr>
<td>13. I have to buck a rule or policy in order to carry out an assignment.</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Please go on to next page . . .
Rate how true the characteristic is of your particular job.

<table>
<thead>
<tr>
<th>Job Characteristic</th>
<th>How True?</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. I have to &quot;feel my way&quot; in performing my duties.</td>
<td></td>
</tr>
<tr>
<td>15. I receive assignments that are within my training and capability.</td>
<td></td>
</tr>
<tr>
<td>16. I feel certain how I will be evaluated for a raise or promotion.</td>
<td></td>
</tr>
<tr>
<td>17. I have just the right amount of work to do.</td>
<td></td>
</tr>
<tr>
<td>18. I know that I have divided my time properly.</td>
<td></td>
</tr>
<tr>
<td>19. I work with two or more groups who operate quite differently.</td>
<td></td>
</tr>
<tr>
<td>20. I know exactly what is expected of me.</td>
<td></td>
</tr>
<tr>
<td>21. I receive incompatible requests from two or more people.</td>
<td></td>
</tr>
<tr>
<td>22. I am uncertain as to how my job is linked.</td>
<td></td>
</tr>
<tr>
<td>23. I do things that are apt to be accepted by one person and not accepted by others.</td>
<td></td>
</tr>
<tr>
<td>24. I am told how well I am doing on my job.</td>
<td></td>
</tr>
<tr>
<td>25. I receive an assignment without adequate resources and materials to execute it.</td>
<td></td>
</tr>
<tr>
<td>26. Explanation is clear of what has to be done.</td>
<td></td>
</tr>
<tr>
<td>27. I work on unnecessary things.</td>
<td></td>
</tr>
<tr>
<td>28. I have to work under vague directives or orders.</td>
<td></td>
</tr>
<tr>
<td>29. I perform work that suits my values.</td>
<td></td>
</tr>
<tr>
<td>30. I do not know if my work will be acceptable to my boss.</td>
<td></td>
</tr>
</tbody>
</table>

Please go to next page...
Think of the kind of supervision that you get on your job. How well does each of the following words describe this supervision? In the blank beside each word below, put Y if it describes the supervision you get on your job, N if it does not describe it, and ? if you cannot decide.

SUPERVISION ON PRESENT JOB

Asks my advice
Hard to please
Impolite
Praises good work
Tactful
Influential
Up-to-date
Doesn't supervise enough
Quick tempered
Tells me where I stand
Annoying
Stubborn
Knows job well
Bad
Intelligent
Leaves me on my own
Around when needed
Lazy

Think of the majority of the people that you work with now or the people you meet in connection with your work. How well does each of the following words describe these people? In the blank beside each word below, put Y if it describes the people you work with, N if it does not describe them, and ? if you cannot decide.

PEOPLE ON YOUR PRESENT JOB

Stimulating
Boring
Slow
Ambitious
Stupid
Responsible
Fast
Intelligent
Easy to make enemies
Talk too much
Smart
Lazy
Unpleasant
No privacy
Active
Narrow interests
Loyal
Hard to meet
Please make sure that the blank beside each word in this section has either a Y, N, or ?.

Think of your present work. What is it like most of the time? In the blank beside each word given below, write Y for "Yes" if it describes your work, N for "No" if it does NOT describe it, or ? if you cannot decide.

### WORK ON PRESENT JOB
- Fascinating
- Routine
- Satisfying
- Boring
- Good
- Creative
- Respected
- Hot
- Pleasant
- Useful
- Tiresome
- Healthful
- Challenging
- On your feet
- Frustrating
- Simple
- Endless
- Gives sense of accomplishment

Think of the pay you get now. How well does each of the following words describe your present pay? In the blank beside each word, put Y if it describes your pay, N if it does NOT describe it, or ? if you cannot decide.

### PRESENT PAY
- Income adequate for normal expenses
- Satisfactory profit sharing
- Barely live on income
- Bad
- Income provides luxuries
- Insecure
- Less than I deserve
- Highly Paid
- Underpaid

Think of the opportunities for promotion that you have now. How well does each of the following words describe these? In the blank beside each word put Y if it describes your opportunities for promotion, N for "No" if it does NOT describe them, or ? if you cannot decide.

### OPPORTUNITIES FOR PROMOTION
- Good opportunities for promotion
- Opportunity somewhat limited
- Promotion on ability
- Dead-end job
- Good chance for promotion
- Unfair promotion policy
- Infrequent promotions
- Regular promotions
- Fairly good chance for promotion

Please go to next page . . .
In this section you are asked how you view your performance on your present job. Eight general dimensions of management activity are listed below. Please read each description carefully.

After each question indicate the number which best describes how effective (on a low to high effectiveness basis) you feel your performance has been on your present job. Use the following scale to indicate your judgments:

1 2 3 4 5 6 7
Low Average High

1. Planning: Determining goals, policies, and sources of action.

2. Investigating: Collecting and preparing of information, usually in the form of records, reports, and accounts.

3. Coordinating: Exchanging information with people in the organization other than your subordinates in order to relate and adjust programs

4. Evaluating: Assessment and appraisal of proposals or of reported or observed performance.

5. Supervising: Directing, leading, and developing your subordinates.

6. Staffing: Maintaining the work force of your unit or of several units.

7. Negotiating: Purchasing, selling, or contracting for goods or services.

8. Representing: Advancing the general interests of your organization through speeches, consultation, and contracts with individuals or groups outside the organization.

1. Planning . . . . . . . . . 5. Supervising . . . . . . . . .
2. Investigating . . . . . . 6. Staffing . . . . . . . . .
3. Coordinating . . . . . . 7. Negotiating . . . . . . .
4. Evaluating . . . . . . . . 8. Representing . . . . . . .

Overall Performance: Give the numbers which best answer the next two questions:

9. How do you rate your overall effectiveness as a manager on your present job?

10. How do you feel your supervisor rates your overall effectiveness as a manager on your present job?

Please go to next page . .
This section pertains to your department, section, division. Circle the answer you feel is most accurate.

1. Manager(s) tends to take a personal interest in the people under them.
   
   1  2  3  4  5
   Agree  Disagree

2. An extremely friendly atmosphere prevails among people in this department, section, division.
   
   1  2  3  4  5
   Agree  Disagree

3. Individuals can usually count on their manager(s) to back them up.
   
   1  2  3  4  5
   Agree  Disagree

4. Praise and recognition are almost always given for doing a good job.
   
   1  2  3  4  5
   Agree  Disagree

Please go to next page ...
I. INSTRUCTIONS FOR MARKING

To answer the questions below, mark an "X" in one or more of the boxes to the right of each question. If the event in question has occurred to you within the past two years, indicate when it occurred by marking in the appropriate column: 0-6 months ago, 7-12 months ago, etc. It may be the case with some of the events below that you experienced them over more than one of the time periods listed for the past two years. If so, mark all the appropriate boxes. If the event has not occurred to you during the last two years (or has never occurred to you) leave all the boxes empty.

### A. HEALTH

Within the time periods listed, have you experienced:

<table>
<thead>
<tr>
<th>Event</th>
<th>19-24</th>
<th>13-18</th>
<th>7-12</th>
<th>0-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>experienced:</td>
<td>ago</td>
<td>ago</td>
<td>ago</td>
<td>ago</td>
</tr>
<tr>
<td>an illness or injury which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) kept you in bed a week or more, or took you to the hospital?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(b) was less serious than described above?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>a major change in eating habits?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>a major change in sleeping habits?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>a change in your usual type and/or amount of recreation?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

### B. WORK

Within the time periods listed, have you:

<table>
<thead>
<tr>
<th>Event</th>
<th>19-24</th>
<th>13-18</th>
<th>7-12</th>
<th>0-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>changed to a new type of work:</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>changed your work hours or conditions?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>had a change in your responsibilities at work:</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(a) more responsibilities?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(b) less responsibilities?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(c) promotion?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(d) demotion?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(e) transfer?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>experienced troubles at work:</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(a) with your boss?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(b) with co-workers?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(c) with persons under your supervision?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(d) other work troubles?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>experienced a major business readjustment?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

### C. FINANCIAL

Within the time periods listed, have you:

12. taken on a moderate purchase, such as a T.V., car, freezer, etc.?   | ☐     | ☐     | ☐    | ☐   |
13. taken on a major purchase or a mortgage loan, such as a home, business, property, etc.? | ☐     | ☐     | ☐    | ☐   |
14. experienced a foreclosure on a mortgage or loan?                  | ☐     | ☐     | ☐    | ☐   |
15. experienced a major change in finances:                           | ☐     | ☐     | ☐    | ☐   |
| (a) increased income?                                               | ☐     | ☐     | ☐    | ☐   |
| (b) decreased income?                                               | ☐     | ☐     | ☐    | ☐   |
| (c) credit rating difficulties?                                      | ☐     | ☐     | ☐    | ☐   |

Please go on to next page...
Within the time periods listed, have you experienced?

<table>
<thead>
<tr>
<th>Event</th>
<th>19-24</th>
<th>13-18</th>
<th>7-12</th>
<th>0-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>a change in residence:</td>
<td></td>
<td></td>
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<td>(a) a move within the same town or city?</td>
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<td>(b) a move to a different town, city or state?</td>
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<td>a change in family &quot;get-togethers&quot;?</td>
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<td>major change in health or behavior of a family member (illnesses,</td>
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<td>accidents, drug or disciplinary problems, etc.)?</td>
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<td>major change in your living conditions (home improvements or a</td>
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<td>decline in your home or neighborhood)?</td>
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<td>death of a spouse?</td>
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<td>the death of a:</td>
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<td>(a) child?</td>
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<td>(b) brother or sister?</td>
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<td>(c) parent?</td>
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<td>(d) other close family member?</td>
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<td>the death of a close friend?</td>
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<td>marriage?</td>
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<td>(b) due to marital problems?</td>
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<td>a divorce?</td>
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<td>a gain of a new family member:</td>
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<td>(a) birth of a child?</td>
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<td>(b) adoption of a child?</td>
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<td>(c) a relative moving in with you?</td>
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<td>wife beginning or ceasing work outside the home?</td>
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<td>wife becoming pregnant?</td>
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<td>a child leaving home:</td>
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<tr>
<td>(a) due to marriage?</td>
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<td>(b) to attend college?</td>
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<td>(c) for other reasons?</td>
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E. PERSONAL AND SOCIAL

Within the time periods listed, have you experienced?

<table>
<thead>
<tr>
<th>Event</th>
<th>19-24</th>
<th>13-18</th>
<th>7-12</th>
<th>0-6</th>
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<tbody>
<tr>
<td>a major personal achievement?</td>
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<td>a change in your personal habits (your dress, friends, life-style, etc.)?</td>
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<td>sexual difficulties?</td>
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<td>beginning or ceasing school or college?</td>
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<td>a change of school or college?</td>
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<td>a vacation?</td>
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<td>a change in your religious beliefs?</td>
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<tr>
<td>a change in your social activities (clubs, movies, visiting)?</td>
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<td>a minor violation of the law?</td>
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</tbody>
</table>

Please go to next page...
"Are you satisfied or happy with the way your spouse helps you cope with your own job tensions? (check one)

(a) I am very satisfied with the way my spouse helps me cope with my own job tensions. He/she does a great job.

(b) I am fairly well satisfied. My spouse does a good job.

(c) I am somewhat satisfied. My spouse does a fairly good job.

(d) I am not satisfied. My spouse only does a fair job.

(e) I am somewhat dissatisfied. My spouse does not do a good job at this.

(f) I am very dissatisfied with the way my spouse helps me cope with my own job tensions. He/she does a very poor job at this.

Please go to next page . . .
How frequently do you and your spouse argue on the following subjects (an argument is defined as one in which you take different positions and defend your point of view but do not necessarily become angry):

A. Children:
(1) very often
(2) frequently
(3) sometimes
(4) rarely
(5) never

B. Money:
(1) very often
(2) frequently
(3) sometimes
(4) rarely
(5) never

C. Recreation:
(1) very often
(2) frequently
(3) sometimes
(4) rarely
(5) never

D. Use of house and furniture:
(1) very often
(2) frequently
(3) sometimes
(4) rarely
(5) never

1. How often do you and your spouse have quarrels?
(1) never
(2) rarely
(3) occasionally
(4) fairly often
(5) very often
(6) continuously

2. Have you ever lived apart from your spouse following a quarrel?
(1) never
(2) once
(3) twice
(4) three times
(5) if more, how many

3. Have you ever considered separating from your spouse?
(1) seriously
(2) somewhat seriously
(3) not seriously
(4) have never considered it

4. Everything considered, how happy has your marriage been for you?
(1) extraordinarily happy
(2) decidedly happy
(3) neither very happy or unhappy
(4) somewhat unhappy
(5) decidedly unhappy

5. Indicate degree of satisfaction or dissatisfaction in your relationship to your spouse:
(1) entirely satisfied
(2) generally satisfied
(3) fairly well satisfied
(4) somewhat dissatisfied
(5) entirely dissatisfied

Please go to next page . . .
Thank you for your time and effort in completing this questionnaire.

Please place the completed questionnaire in the envelope provided and drop it in the mail.

THANK YOU
APPENDIX C

RECENT LIFE CHANGES SCORING WEIGHTS
I. INSTRUCTIONS FOR MARKING

To answer the questions below, mark an "X" in one or more of the boxes to the right of each question. If the event in question has occurred to you within the past two years, indicate when it occurred by marking in the appropriate column: 0-6 months ago, 7-12 months ago, etc. It may be the case with some of the events below that you experienced them over more than one of the time periods listed for the past two years. If so, mark all the appropriate boxes. If the event has not occurred to you during the last two years (or has never occurred to you) leave all the boxes empty.

A. HEALTH
Within the time periods listed, have you experienced:

1. an illness or injury which:
   (a) kept you in bed a week or more, or took you to the hospital?
   (b) was less serious than described above?

2. a major change in eating habits?

3. a major change in sleeping habits?

4. a change in your usual type and/or amount of recreation?

B. WORK
Within the time periods listed, have you:

5. changed to a new type of work:

6. changed your work hours or conditions?

7. had a change in your responsibilities at work:
   (a) more responsibilities?
   (b) less responsibilities?
   (c) promotion?
   (d) demotion?
   (e) transfer?

8. experienced troubles at work:
   (a) with your boss?
   (b) with co-workers?
   (c) with persons under your supervision?
   (d) other work troubles?

9. experienced a major business readjustment?

10. retired?

11. experienced being:
   (a) fired from work?
   (b) laid off from work?

C. FINANCIAL
Within the time periods listed, have you:

12. taken on a moderate purchase, such as a T.V., car, freezer, etc.?

13. taken on a major purchase or a mortgage loan, such as a home, business, property, etc.?

14. experienced a foreclosure on a mortgage or loan?

15. experienced a major change in finances:
   (a) increased income?
   (b) decreased income?
   (c) credit rating difficulties?
D. HOME AND FAMILY
Within the time periods listed, have you experienced:

16. a change in residence:
   (a) a move within the same town or city?
   (b) a move to a different town, city or state?

17. a change in family "get-togethers"?

18. major change in the health or behavior of a family member (illnesses, accidents, drug or disciplinary problems, etc.)?

19. major change in your living conditions (home improvements or a decline in your home or neighborhood)?

20. death of a spouse?

21. the death of a:
   (a) child?
   (b) brother or sister?
   (c) parent?
   (d) other close family member?

22. the death of a close friend?

23. marriage?

24. a change in arguments with your spouse?

25. in-law problems?

26. a separation from spouse?
   (a) due to work?
   (b) due to marital problems?

27. a reconciliation with spouse?

28. a divorce?

29. a gain of a new family member:
   (a) birth of a child?
   (b) adoption of a child?
   (c) a relative moving in with you?

30. wife beginning or ceasing work outside the home?

31. wife becoming pregnant?

32. a child leaving home:
   (a) due to marriage?
   (b) to attend college?
   (c) for other reasons?

E. PERSONAL AND SOCIAL
Within the time periods listed, have you experienced:

33. a major personal achievement?

34. a change in your personal habits (your dress, friends, life-style, etc.)?

35. sexual difficulties?

36. beginning or ceasing school or college?

37. a change of school or college?

38. a vacation?

39. a change in your religious beliefs?

40. a change in your social activities (clubs, movies, visits, etc.)?

41. a minor violation of the law?

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Weight (points)

20—(a) only

15

44

25

100

63—(score only once)
BIBLIOGRAPHY

Books


Articles


194


Public Documents


Unpublished Materials


