

T-F-A PATTERNS, COPING STRATEGIES,
AND PERSONALITY CHARACTERISTICS
ASSOCIATED WITH
TYPE A/B BEHAVIOR

by

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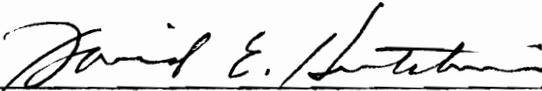
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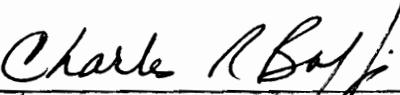
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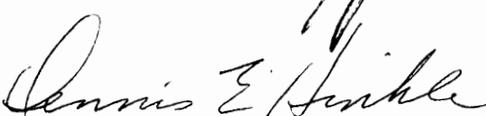
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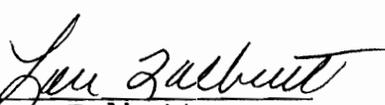
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(ABSTRACT)

This study used Hutchins' T-F-A System as a conceptual framework to determine whether relationships exist among thinking-feeling-acting (T-F-A) behavior patterns, selected personality characteristics, coping strategies, and Type A/B behavior patterns. Variables were measured by the Hutchins Behavior Inventory or HBI (T-F-A patterns), the Adjective Check List (personality characteristics), the Ways of Coping Scales (coping strategies), and The Jenkins Activity Survey (Type A/B behavior).

Subjects were 77 employed males who were members of service organizations in three small West Virginia towns. Subjects were classified into one of four T-F-A pattern groups on the basis of their HBI responses to a self-identified stressful work situation.

Statistical strategies involved analyzing the variables with crosstabulation, analyses of variance and covariance, and multivariate analysis of variance. No significant differential effect of the T-F-A classification on Type A/B behavior nor on any of the Type A/B subscales was discerned. Likewise, when controlling for the effects of selected personality factors and for the effects of coping strategies on Type A/B behavior, no significant differences were observed across the four T-F-A pattern groups. Possible explanations for the absence of significant differences on these measures and the utility of the study were discussed.

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LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Descriptive Characteristics of the Subjects.....	39
2. HBI Group Means and Standard Deviations for Variables Included in the Study.....	41
3. Cross-tabulation: HBI Groups by JAS Type.....	42
4. Residual Variance Without ACL Variables.....	44
5. Intercorrelations Among ACL Variables.....	45
6. Residual Variance Without Coping Variables.....	46
7. Intercorrelations Among Coping Variables.....	47

TABLE OF CONTENTS

ABSTRACT..... ii
ACKNOWLEDGMENTS..... iv
LIST OF TABLES..... vi

CHAPTER

I. INTRODUCTION..... 1
 Problem Statement..... 3
 Purposes..... 3
 Assumptions..... 5
 Research Questions..... 7
 Definitions..... 7
 Limitations of the Study..... 10
 Need for the Study..... 11
II. REVIEW OF RELATED RESEARCH..... 14
 Historical Background..... 14
 Description of the Type A Behavior Pattern 14
 Trait Components of the Type A Behavior
 Pattern..... 18
 Achievement..... 19
 Dominance..... 20
 Aggression..... 20
 Endurance..... 21
 Autonomy..... 22
 Exhibition..... 23

Assessment of the Type A Behavior Pattern.	23
Influence of Stress.....	25
III. INSTRUMENTATION AND RESEARCH DESIGN.....	29
Procedures.....	29
Data Collection Method.....	30
Instrumentation.....	32
Scoring of the Tests.....	35
Research Questions & Analyses of Data.....	36
IV. RESULTS.....	38
Demographic Data.....	38
Research Question One.....	41
Research Question Two.....	43
Research Question Three.....	45
V. SUMMARY.....	48
Summary of the Results.....	48
Behavior Patterns Present in the Group....	49
Differences Controlling for Personality Measures.....	51
Differences Controlling for Coping Strategies.....	52
Conclusions.....	53
Implications for Intervention.....	54
Discussion.....	57
Recommendation for Further Research.....	58
Serendipitous Findings.....	59
REFERENCES.....	62

APPENDIX A	
T-F-A Dimensions	74
APPENDIX B	
Jenkins Activity Survey.....	76
APPENDIX C	
Hutchins Behavior Inventory.....	80
APPENDIX D	
Adjective Checklist.....	81
APPENDIX E	
Ways of Coping Scales.....	83
APPENDIX F	
Informed Consent Form.....	86
APPENDIX G	
Directions for Study.....	88
APPENDIX H	
Health Questionnaire.....	89
APPENDIX I	
T-F-A Pattern Groups.....	91
VITA.....	93

CHAPTER ONE

Introduction

Epidemiological research has implicated the Type A behavior pattern as a risk factor in the development of cardiovascular disease (see reviews by Brand, 1978; Jenkins, 1976; Zyzanski, 1978). A risk factor, by definition, is a set of attributes or markers of persons likely to be diagnosed later with a specific illness (Matthews, 1982). In the case of Type A behavior, this pattern is simply a collection of behaviors thought to characterize future cardiac patients. Individuals manifesting this behavior pattern are characterized by excessive time urgency, hard-driving competitive behavior, aggressiveness, hostility, and impatience, all of which are evoked readily by a variety of stimuli in the environment (Rosenman & Freidman, 1974). Over the past two decades, both retrospective and prospective research have demonstrated that the Type A pattern is associated, independently of traditional risk factors, with both the incidence and prevalence of coronary heart disease (CHD) and the presence of coronary atherosclerosis (Blumenthal et al., 1978; Brand et al., 1976; Rosenman et al., 1975; Zyzanski et al., 1976).

Although the Type A behavior pattern is firmly established as a risk factor for CHD, it is a global concept that is not well understood from a psychological or a

behavioral perspective (Matthews, 1982). Specific efforts have been taken to clarify the Type A concept. One approach has been to try to distinguish the more central components (Price, 1982). Here, studies using traditional personality measures, such as the Adjective Check List, have provided some clarification (Rahe et al., 1978; Chesney et al., 1981; Herman et al., 1981). However, these studies fail to account for the possible relationships among the identified components.

A second approach to understanding the Type A behavior pattern has been to look for themes underlying the various components (Price, 1982). For example, Glass (1977) views the Type A pattern as a characteristic style of responding to environmental stressors which threaten an individual's sense of control. Jenkins (1975) has asserted that determining the ways in which coronary prone individuals cope with negative feelings is among the more promising categories of variables deserving further study. Price (1982) suggests that the frequency of stressful life events and the coping resources one possesses may be a critical mediating factor between the Type A pattern and coronary heart disease.

A detailed understanding of the dynamics of the Type A behavior pattern, including its relation to coping, must consider individual elements of the pattern as well as the

overall pattern (Vickers et al., 1981). Information underlying the characteristics of the Type A behavior pattern is required now that efforts to develop interventions to modify the behavior pattern have increased (Roskies et al., 1979; Suinn, 1981). Matthews (1982) suggests that the greatest impediment to progress in understanding the psychological nature of the Type A behavior pattern is the failure to measure Type A in a comprehensive manner. Consequently, it appears that one of the difficulties in the assessment and subsequently, the treatment of Type A behavior has been the lack of understanding of how the psychological and behavioral components might be interrelated and how these interrelated components are linked to situations that activate the pathogenic effects of the Type A behavior pattern.

Problem Statement

The problem was to determine whether Type A/B behavior patterns, selected personality characteristics, T-F-A patterns, and coping strategies may be related.

Purpose

One approach that may offer a better understanding of the underlying characteristics of the Type A individual, as well as a model for intervention, is the use of the Hutchins Behavior Inventory (HBI) to assess the Thinking-Feeling-Acting (T-F-A) dimensions of behavior. The T-F-A System

allows for the assessment of the interaction of thoughts, feelings, and actions of an individual in a systematic manner and makes possible the structuring of cognitive, affective, and behavioral interventions (see Hutchins, 1979, 1982, 1984).

The purpose of this study was to investigate the relationships among T-F-A behavior patterns, Type A/B behavior, and situational stress. Two objectives pertained to this purpose. The first objective was to investigate the relationships among T-F-A patterns, traditional personality characteristics and Type A/B behavior. The second objective was to investigate relationships among T-F-A patterns, coping strategies, and Type A/B behavior.

Ancillary purposes were:

1. to determine the T-F-A patterns that emerged for a group of employed males.
2. to determine whether differences in Type A/B behavior existed across T-F-A behavior patterns as measured by the HBI.
3. to determine whether differences existed across T-F-A behavior patterns when controlling for selected personality characteristics of Type A and Type B individuals.

4. to determine whether differences existed across T-F-A patterns when controlling for the coping strategies used by Type A and Type B individuals.
5. to explore the implications of the results of this study as they relate to treatment and modification of coronary-prone Type A behavior.

Assumptions

Two major assumptions served as a starting point for this study. The first assumption, that the T-F-A System could serve as a conceptual framework for understanding the Type A and Type B constructs, was based upon the following observations:

1. Description of the Type A behavior pattern is very similar to the description of the Acting oriented individual in the T-F-A System. (See Appendix A for descriptions of the T-F-A behavior dimensions.)
2. Lynch's (1985) notion that individuals suffering from cardiovascular diseases are not aware of their feelings.

From these two observations, it can be reasoned that Type A behavior may be positively correlated with Acting patterns and negatively correlated with Feeling patterns. The second assumption upon which this study is based is grounded in the idea that the Type A behavior pattern represents a coping

strategy or adaptation to the environment that is situation specific as opposed to a trait. Traits refer to relatively stable and highly consistent inborn personality dispositions (Hilgard & Bower, 1975). The structure of a person's traits, rather than the environment or specific stimulus conditions, are thought to determine a person's behavior. Traits are considered "intrapsychic causes of behavior consistency" across situations, and are inferred from the behavior that they are thought to determine (Mischel, 1973, p. 264). Empirical studies of personality indicate that such global dispositions are not generally adequate to account for a large portion of observed behavior (cf. Mischel, 1968, 1973). While trait labels have been useful in epidemiology, a trait theory falls short when used as the basis for predicting or modifying an individual's behavior (Mischel, 1973). Thus, trait theories are not concerned with factors that encourage or discourage the continued expression of the behavior in question. Yet, it is precisely these considerations that must be taken into account if we are to develop a useful model of the Type A behavior pattern.

Consequently, relating the Type A pattern to patterns of thinking, feeling, and acting as well as to specific coping strategies, in addition to the traditional psychological characteristics that are thought to be components, may provide a better understanding of the Type A behavior construct.

Research Questions for the Study

The following questions guided the research:

1. In response to stress, what T-F-A patterns emerge across the A-B continuum for a group of employed males?
 - a. Do individuals classified by T-F-A patterns differ from each other on measures of Type A/B behavior?
 - b. Do individuals classified by T-F-A patterns differ from each other on the factor scores of the Jenkins Activity Survey?
2. Do individuals classified by T-F-A patterns differ from each other on measures of Type A/B behavior when controlling for selected personality characteristics?
3. Do individuals classified by T-F-A patterns differ from each other on measures of Type A/B behavior when controlling for selected coping strategies?

Definitions

The following are definitions of terms relevant to this study.

Adjective Check List (ACL) - a measure of personality based upon Murray's need-press theory, consisting of 300 adjectives commonly used to describe a person's attributes (Gough & Heilbrun, 1983).

The following ACL scales were used:

Achievement (ACH) - to strive to be outstanding in pursuits of socially recognized significance.

Aggression (AGG) - to engage in behaviors that attack or hurt others.

Autonomy (AUT) - to act independently of others or social values and expectations.

Dominance (DOM)- to seek and maintain a role as a leader in a group; to be influential and controlling in individual relationships.

Endurance (END)- to persist in any task undertaken.

Exhibition (EXH) - to behave in such a way as to elicit the immediate attention of others.

Atherosclerosis - a generalized condition of the arteries with plaques of fatty material (cholesterol and other saturated fats) and calcium on the inside of their arterial wall (Miller, 1976).

Coping - cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding a persons resources (Folkman & Lazarus, 1980).

Coronary Heart Disease (CHD) - a condition in which atherosclerosis is the primary characteristic. Clinical complications associated with CHD include angina pectoris,

sudden arrhythmic death, and myocardial infarction (Feuerstein, Labbe, & Kuczmierczyk, 1986).

Hutchins Behavior Inventory (HBI) - a measure created by Hutchins (1984) to assess an individual's behavioral orientation along three dimensions: Thinking, Feeling, and Acting (T-F-A).

Jenkins Activity Survey (JAS) - a paper and pencil test used to classify coronary-prone (Type A) and non-coronary-prone (Type B) individuals (Jenkins, 1975).

Risk Factor - a set of attributes or markers of persons likely to be diagnosed later with a specific disease (Matthews, 1982).

Stress - a relationship between the person and the environment that is appraised by persons as taxing or exceeding their resources or endangering their well-being (Folkman & Lazarus, 1980).

Stressor - stimulus that evokes coping responses (Feuerstein, Labbe, & Kuczmierczyk, 1986).

Type A Behavior Pattern - a constellation of behaviors, (such as, excessive time urgency, aggressiveness, hostility, and competitiveness), exhibited in response to stress, that have been associated with increased risk of coronary heart disease (Matthews, 1982).

Type B Behavior Pattern - a style of coping which is not associated with increased risk of coronary heart disease (Matthews, 1982).

T-F-A System - a theoretical model devised by Hutchins (1979, 1982, 1984) relating conceptually and graphically the interaction of a person's thinking (T), feeling (F) and acting (A) in a given situation.

T-F-A Triangle - A graphic representation of an individual's pattern of thinking, feeling, and acting in a given situation (Hutchins, 1986).

Ways of Coping Scales - a 66-item self-report measure of typical cognitive and behavioral strategies people use to manage stressful situations (Folkman & Lazarus, 1980).

Limitations of the Study

This study has the following limitations:

1. The data were collected from males who were members of service organizations in communities with populations of approximately 30,000.
2. The data were collected from individuals who "volunteered" to participate in the study. Therefore, the results may reflect a selection bias.

3. While there are several ways of assessing the personality and behavioral variables, the following were used:
 - a. The Jenkins Activity Survey to assess Type A behavior and Type B behavior.
 - b. The Adjective Check List (ACL) to assess selected personality characteristics.
 - c. The Hutchins Behavior Inventory (HBI) to assess T-F-A behavior patterns.
 - d. The Ways of Coping Scales to assess coping strategies for one specific stressful situation.

Justification for the use of these instruments appears in Chapter Three.

Need for the Study

CHD is the leading cause of death in the United States. Approximately 66,890,000 Americans have some form of cardiovascular disease (American Heart Association, 1989). In spite of numerous epidemiological studies, the etiology of coronary heart disease remains an enigma. For example, inspection of the leading risk factors for coronary heart disease (i.e., elevated levels of serum cholesterol, blood pressure, and cigarette smoking) shows that the best combination of these factors does not predict the emergence of most new cases of coronary heart disease (Jenkins, 1976;

Keys et al., 1972). In fact, traditional risk factors account for only one-half of the incidence of CHD (Keys et al., 1972). Consequently, attention has turned to the search for new risk factors and, more specifically, to the role of psychological and behavioral factors (Matthews, 1982).

Much of the research effort has focused on identifying the Type A behavior pattern and establishing a "risk factor" relationship between the Type A behavior pattern and CHD (Friedman & Rosenman, 1974; Glass, 1977; Jenkins, 1976; Zyzanski et al., 1976). In recent years, the focus of research has broadened to include the relationships among psychological and social factors to Type A behavior. While the literature suggests that there are correlations between the Type A behavior pattern and traditional psychological variables, the interpretation of these findings provides little insight into treatment strategies (Price, 1982).

Furthermore, Price (1982) notes that research on the A/B constructs has been restricted by the following problems:

1. research efforts have largely ignored the Type B behavior pattern;
2. research efforts have not used an identified conceptual model; consequently, the components that have been suggested are not able to be integrated and possible relationships among them discerned;

3. the findings of the studies have provided little insight into treatment strategies.

This study differs from prior research because it:

1. examines both Type A and Type B behaviors. Considering the relative immunity from heart disease conferred by Type B, a case can be made for studying Type B. Psychological research has demonstrated the effectiveness of behavior change methods that go beyond elimination of dysfunctional behavior by teaching more functional methods of behaving. (Antonovsky, 1979). Thus, reducing negatively valued behavior is facilitated by introducing a positively valued alternative. A crucial question, then is, how can we expect to reduce Type A behaviors when we are not clear about the behaviors and characteristics that should be encouraged in its place?
2. uses a conceptual model, Hutchins' T-F-A System, a metatheoretical model that relates conceptually and graphically to an individual's pattern of thinking, feeling, and acting in a given situation; and, most importantly, suggests to the counselor or change agent combinations of cognitive, affective, and behavioral strategies that are most effective in working with an individual (Hutchins, 1979).

CHAPTER TWO

Review of Related Literature

Historical Background

The association of personality and behavioral factors with cardiovascular disease is not new. Jenkins (1978) writes that in the late nineteenth century, Sir William Osler observed that CHD tended to attack "not the delicate, neurotic person...but the robust, the vigorous in mind and body, the keen and ambitious man, the indicator of whose engine is always set at full speed ahead." Osler wrote in 1897, "I believe that the high pressure at which men live, and the habit of working the machine to its maximum capacity are responsible for (arterial degeneration) rather than excesses in eating and drinking."

In this century, Osler's description was elaborated upon by the Menningers (1936) who saw in coronary patients strong aggressive tendencies which often were repressed, Kemple (1945) affirmed this pattern of aggressiveness and added that coronary patients were usually ambitious and strove compulsively to achieve goals.

Description of the Type A Behavior Pattern

Perhaps the greatest progress toward an integrated description of the psychological and behavioral contributions to CHD has come from the work of Friedman and Rosenman

(1959), who proposed that CHD was associated with a pattern of behaviors which were labeled Type A and defined as:

a characteristic action-emotion complex exhibited by those individuals who are engaged in a relatively chronic struggle to obtain an unlimited number of poorly defined things from their environment in the shortest period of time and if necessary against opposing efforts of other things or persons in the same environment (p. 1285).

Friedman and Rosenman (1959) furthered this definition by suggesting the following components of the Type A behavior pattern: 1. persistent drive to achieve self-identified goals which are usually poorly defined; 2. intense desire and eagerness to compete; 3. persistent need for recognition and advancement; 4. continuous performance of multiple and diverse tasks which are done to internally or externally set time restrictions (deadlines); 5. habitual inclination to accelerate the execution rate of many physical and mental functions; 6. extraordinary mental and physical alertness.

Jenkins (1975) expanded this definition with a more detailed list of Type A indicators. Type A individuals seem to value responsibilities and challenges and seek recognition and power. They value work over relaxation. They prefer to be respected for what they do rather than for who they are. Their productivity, in terms of quantity and speed, is a priority criteria which they use to assess themselves and others.

In behavioral terms, Jenkins (1975) notes that Type A individuals are observed more often as doing or thinking several things at one time. They also tend to anticipate or react to things in advance. Furthermore, the Type A pattern is characterized by rapid actions. These individuals move quickly and tend to hurry others. Their speech is often rapid and their gestures tense and energetic.

While empirical research is lacking as to the cognitive components of the Type A behavior pattern, Price (1982) proposes in her cognitive-behavior model of Type A behavior that cognitions are the core of the construct. Price (1982) notes that the behavior pattern appears to be an outgrowth of the way Type A individuals view themselves and the world. For example, Type A's may believe that they are only worthy of love, esteem, and/or approval when they are producing and achieving.

On the affective level, Jenkins (1975) describes Type A individuals as characterized by internal feelings of hostility, impatience, and irritability. This complex behavior pattern appears to be present in Type A persons in situations which are either internally or externally perceived as challenging (Burke & Weir, 1980). Individuals who do not react with this described behavior pattern under similar situations are termed Type B.

Association of the Type A Behavior Pattern and CHD

Rosenman and Chesney (1980) conclude that the association of Type A behavior pattern and the prevalence of CHD has been confirmed in the findings of numerous studies, almost without exception.

The first evidence of a link between Type A behavior and CHD was provided by the Western Collaborative Group Study (Rosenman, Brand, Jenkins, Friedman, Straus, & Wurm, 1975). In this study, subjects identified as having the Type A behavior pattern later suffered twice the CHD rate experienced by Type B individuals. Other prospective studies in Belgium and at Framingham confirmed this two-fold risk (Haynes, Feinleib, & Kannel, 1980; Kornitzer, Magotteau, Degre, Kittel, Struyven, & van Thiel, 1982). Furthermore, since the initial study, the Type A behavior pattern has correlated with severity of coronary atherosclerosis observed at autopsy (Friedman, Rosenman, Straus, Wurm, & Kositchek, 1968), as well as in angiographic studies (Blumenthal, Williams, Kong, Schanberg, & Thompson, 1978; Frank, Heller, Kornfeld, Sport, & Weiss, 1978; Zyzanski, Jenkins, Ryan, Flessas, and Everist; 1976).

After consideration of the growing body of research confirming the risk associated with the Type A behavior pattern, a review panel convened by the National Heart, Lung, and Blood Institute recognized Type A behavior as an

independent risk factor for CHD (Review Panel for Coronary-Prone Behavior and CHD, 1981). Moreover, this review concluded that "the increased risk associated with Type A behavior is over and above that imposed by age, blood pressure, serum cholesterol, and smoking, and appears to be of the same magnitude as the relative risk associated with any of the other factors."

However, a number of groups have attempted to replicate the Western Collaborative Group Study findings, with mixed results. The Framingham Heart Study found the relation between Type A behavior and coronary disease was influenced by the patient's age, sex, and occupation (Haynes, Feinleib, and Kannel, 1980). The Multiple Risk Factor Intervention Trials (MRFIT) failed to reveal a relation between Type A behavior and the subsequent development of coronary disease in a group of men at high risk by virtue of having other coronary risk factors (Shekelle, et al., 1985). A recent meta-analysis observed that although there appears to be a relation between Type A behavior and coronary heart disease, the relation is less apparent in studies published after 1977 (Booth-Kewley and Friedman, 1987).

Trait Components of the Type A Behavior Pattern

The lack of congruency of a definition for the Type A behavior pattern has resulted in an examination of numerous and diverse components of this construct. In recent

literature, the principle characteristics examined have been competitiveness, time urgency, aggressiveness, and achievement need (Price, 1982). Although the immense amount of research is noteworthy, the difficulty arises with the interpretation of the terms. Despite this ambiguity in terms, the fact that numerous researchers have found that achievement, dominance, aggression, endurance, autonomy, and exhibition are components of Type A behavior warrants a closer examination of these characteristics.

Achievement

Matthews and Saal (1978) found only one study where the achievement motive did not differentiate between Type A's and Type B's, as measured by the Jenkins Activity Survey (JAS) and the Structured Interview (SI).

Ray and Brozek (1980) using a short form of the Jenkins Activity Survey (JAS) indicated that Type A behavior and achievement striving were associated.

Price (1982) notes that hard-driving and achievement striving have consistently appeared in the literature of research on the Type A behavior pattern.

Hansson et al. (1983) found a moderate correlation between ambition as assessed by the California Personality Inventory and Type A behavior as assessed by the Jenkins Activity Survey (JAS).

Dominance

Although the term dominance has not been specifically cited as being a component of the Type A pattern, it appears to parallel authoritarianism which has been examined by researchers. Friedman & Rosenman's (1959) definition of Type A behavior pattern justifies the hypothesis that dominance correlates with Type A behavior pattern with the statement that Type A individuals strive to compete against other people or obstacles in the environment in order to gain and to maintain control.

Ray and Brozek (1980) found that dominance and motivation to achieve were correlated with the Type A construct. Ray and Simons (1982) found that the Jenkins Activity Survey's measure of directiveness, which is defined as the authoritarian style of dominance, was the most valid predictor of Type A behavior pattern. They hypothesized that the Type A construct may be too broad for predicting CHD.

Aggression

The need for dominance has been hypothesized as an important facilitator of aggressive behavior (Price, 1982).

Lundberg et al. (1980) found the aggression-hostility traits were significantly higher in Type A subjects than in Type B subjects.

Chesney et al.'s (1981) assessment of 384 employed males by the Jenkins Activity Survey (JAS), the Framingham Scale

and the Adjective Checklist supports this hypothesis that Type A individuals possess higher levels of aggressiveness. Among the 21 traits examined, aggressiveness correlated most significantly with the Type A behavior pattern.

Endurance

Observation of Type A individuals in clinical settings reveals their preoccupation with exerting extreme effort on almost all tasks (Price, 1982).

Friedman (1969) described Type A individuals as believing that with sufficient effort they can accomplish any task or overcome any obstacle.

This led Carver et al. (1976) to speculate that Type A's might suppress or deny feelings of fatigue to a greater extent than Type B individuals in order to persist at a task and thus achieve its mastery. The results of their study reveal that Type A individuals work at a level closer to the limits of their endurance than do Type B subjects. Moreover, Type A individuals tend to suppress feelings of fatigue to a greater extent than do their Type B counterparts.

Several studies (Carver et al., 1976; Weidner & Matthews, 1978) have pointed out that Type A individuals tend to underreport the severity of physical symptoms elicited by a stressor.

Autonomy

Glass (1977) has suggested that many of the behaviors exhibited by Type As were attempts to assert and maintain control over others and the environment.

Matthews (1982) describes a series of "reactance" studies with Type A individuals. The theory of reactance posits that eliminating or threatening a person's freedom arouses a motivational state called "reactance" (Brehm, 1966). The goal of this state is to restore or reassert freedom, which can exist in many forms. One way in which Type A's freedom was threatened in these experiments was to present a coercive communication. Carver (1980) hypothesized that if Type A's are more easily threatened by a loss of control than Type B's, then they should show more resistance to a coercive communication. Indeed, the results of these studies are consistent with this hypothesis. Type A's perceived more threat in a coercive communication and changed their opinion in the direction opposite to that advocated in the communication.

Matthews notes that when "reactance" and control findings are taken together, it seems that Type A's respond to threats to control by resisting those threats and trying to reassert control.

Exhibition

Price (1982) suggests the essence of the Type A behavior pattern centers around the belief that one needs to prove oneself. Therefore, she hypothesizes that all the Type A associated behaviors are meant to win the accolades of society.

Castle, Hendrikz, and Jones (cited in Price, 1982) state that heart attacks may be a psychosomatic escape in a culture that penalizes failure. They ask what better psychosomatic escape exists for persons classified as Type A's than one thought to be an occupational hazard of top-ranking and ambitious executives.

Assessment of the Type A Behavior Pattern

The variances in the definition of the Type A behavior pattern have resulted in the development of several assessment techniques. The two major assessment instruments for Type A behavior are the Structured Interview (SI) and the Jenkins Activity Survey (JAS). While both instruments are reliable, they appear to assess different aspects of Type A behavior (Matthews, 1982). The Jenkins Activity Survey is a paper and pencil test that was developed to be a more objective measure of Type A behavior than the SI method. The overall agreement of the JAS with the SI is 72.4 (Jenkins, Rosenman, & Friedman, 1967). Matthews (1982) finds that Type A's assessed by the SI appear to have as their predominant

characteristic a general reactivity to psychological events that are frustrating, difficult, and moderately competitive. Type A's assessed by the JAS can be characterized as vigorous achievement strivers, who can be aggressive and competitive; they also show some indication of cardiovascular changes during difficult and moderately competitive events (Matthews, 1982).

Using the Adjective Check List to Assess Type A Behavior

Limited research studies have attempted to identify which of ACL's 37 scale scores may be correlated with Type A behavior pattern and/or CHD.

Rahe et al. (1978) recruited pairs of twins, between the ages of 42 and 56 years, to determine if Type A behavior pattern or certain components of it are inherited. A series of psychological tests were administered including the ACL. The subscales that correlated with the Structured Interview Type A behavior pattern were aggression, autonomy, exhibition, change, and dominance.

The results of a study by Chesney et al. (1981) using a sample of 384 employed men between the ages of 23 and 64 without a known history of CHD support the findings of Rahe et al. (1978).

Herman et al.'s (1981) study was initiated to determine more specifically what traits differentiate Type A and Type B individuals and whether individuals possess an awareness of

their type. The results of this study were similar to the findings of Rahe et al. (1978) and Chesney et al. (1981). Type A behavior pattern correlated with the ACL subscales of aggression, achievement, and dominance. The extreme Type A's endorsed an average of 60% of the items; whereas, Type B subjects marked those same items 48% of the time.

Influence of Stress

Various aspects of psychological stress and behavior in response to stress (coping) have been implicated in the etiology of cardiovascular disease.

Burke & Weir (1980) have identified significant variances in the coping styles of Type A and Type B individuals. Their results indicate that Type A individuals are more likely to use coping styles involving active behaviors such as problem-solving. Type B individuals are more likely to use distraction, suppression, withdrawal, and escapism to cope with stress.

Pittner and Houston (1980) also examined coping styles of Type A and Type B individuals. Their results contradict those of Burke & Weir (1980). They found Type A individuals use more denial, suppression, and projection than Type B individuals.

Vickers et al. (1981) investigated the relationship between the Type A behavior pattern and high defensiveness as a coping mechanism but failed to find an association. They

suggest that this was due to differences in situational specific reactions of Type A's and Type B's coping strategies. They believe that the Type A individuals may exhibit poor coping mechanisms only in a specific situation which activates the Type A behaviors.

Glass (1977) proposes that the Type A individual engages in various behaviors (i.e., working hard to succeed, suppressing subjective states, and conducting activities at rapid pace) as an attempt to maintain sense of control over stressors in the environment.

Dembroski & MacDougall (1978) indicate that Type A's prefer to sit with others rather than alone while waiting for stressful situation to occur. They argue that Type A's elicit information from others with which to compare their own behavior during the stressful situation.

A number of studies have addressed disease by assessing the actual life stress situations of the subject populations. Glass (1977) suggests that Type A individuals experience a greater number of stressful life situations in daily life. Glass (1977) hypothesizes two reasons for this increased stress: 1. the individual's perception of the situation, 2. the characteristics of Type A may expose these individuals to higher chances of being in a stressful state. For example, the Type A behavior of time urgency may cause an

individual to set unreasonable work deadlines which result in stress.

Smith & Sheridan (1983) investigated the first hypothesis and found that individuals reported stressful situations as occurrences which involved a perceived loss of control.

The second hypothesis, dealing with the specific characteristics of Type A behavior pattern causing a higher degree of stress, was investigated by Byrne (1980, 1981). Byrne (1980) theorized that each individual differs in sensitivity and reaction to distressing life events. The ability of each individual to utilize effective sources of protection, either interpersonally or intrapersonally, may be a differential factor. Patients with myocardial infarctions reported greater feelings of helplessness than did those who suffered angina. Byrne (1980) concluded that subjects with myocardial infarctions perceived greater self-responsibility for stressful life events.

This indirect correlation was further investigated by Byrne (1981) in the hope that a clearer relationship between self-responsibility and Type A behavior could be identified. Type A individuals who had experienced the myocardial infarctions also had experienced a greater number of stressful life events prior to the myocardial infarction. The researcher suggests that this is due to Type A

individuals' response tendencies which influence their organization of life-styles.

Byrne (1981) further hypothesized that Type A individuals maintain a life-style that is directed toward achievement. This desire for achievement leads to a higher level of exposure to stress.

Ditto (1982) investigated the hypothesis that Type A individuals may organize their life-styles differently from Type B individuals by studying the daily activities of college students. Students were instructed to record what they did every hour for one week. Type A students were found to spend more time in class, more time studying, less time socializing, and more time in religious services than their Type B counterparts.

Ditto (1982) concludes a relationship exists between Type A and work load. No attempts were made to gather data concerning stress, perceived or actual, of this subject group. The question of differences between Type A and Type B individuals in actual or perceived stressful situations has not been conclusively established.

CHAPTER THREE

Research Design

The purpose of this study was to investigate the relationships among T-F-A behavior patterns, Type A/B behavior, and situational stress. Two objectives pertained to this purpose. The first objective was to investigate the relationships among T-F-A patterns, traditional personality characteristics, and Type A/B behavior. The second objective was to investigate the relationships among T-F-A patterns, coping strategies, and Type A/B behavior. To fulfill these objectives, a research design was developed and is presented in this chapter. Three aspects of the design are discussed: subjects and procedures; instrumentation; and research questions with the appropriate analyses for each question

Procedures

Subjects

The subjects for this study were employed males between the ages of 23 and 63 who were members of service organizations in three small West Virginia communities, each with populations of approximately 30,000. This population was selected for two reasons: (1) the instrument being used to classify A-B typology was normed on a similar group of males, (b) the accessibility of local service organizations provided the researcher with more control over data collection and assured higher response rates.

Data Collection Method

A request was made to the presidents of service organizations for the researcher to attend an organization meeting for the purpose of recruiting subjects. The researcher attended the meetings and gave a 15 minute description of the project and the requirements for participation. The research was described as a study to examine the relationships among stress, risk factors for coronary heart disease, and personality and behavior characteristics. Participation in the study was voluntary. Subjects were randomly assigned to three groups for administering the instruments. Each group answered the HBI, JAS, and the ACL in differing order to compensate for testing bias. All subjects were given a packet to take with them and to return at their next meeting. Each packet contained the informed consent form as well as the instruments and the directions for completing each one (see Appendices F and G). Subjects were instructed to think of a work situation that is stressful for them and to write that situation in the space provided at the top of the HBI. The subjects used the situation they identified on the HBI to complete the Ways of Coping Checklist. Subjects were given code numbers for testing so that names did not appear on the assessment instruments. Final results of the study as well as

individual feedback were made available to subjects who requested them.

Classification of Subjects

Subjects were assigned on the basis of their HBI scores to one of four major T-F-A pattern groups: 1) TF/FT, 2) TA/AT, 3) FA/AF, 4) TFA (see Appendix I for descriptive characteristics of each pattern group). These classifications were derived by ranking the individual's HBI raw profile scores from highest to lowest. Individuals were classified into one of the above groups on the basis of their two highest profile scores. For example, if an individual's raw profile scores were 35 on the Thinking component, 30 on the Feeling component, and 10 on the Acting component, the individual would be classified into the TF/FT group.

In cases where the difference between the raw scores on the second and third components was less than or equal to seven points, the individual was placed into the TFA group. For example, if an individual's raw scores were 35 on the Feeling component, 23 on the Acting component, and 17 on the Thinking component, then the individual would be classified into the TFA group since the difference between the Acting and Thinking raw scores is less than or equal to seven. The seven point difference was not an arbitrary classification, but indicates differences graphically when scores are plotted on the T-F-A triangle. The T-F-A triangle is based upon the

bipolar scores on the HBI and provides a graphic representation of an individual's thinking, feeling, and acting behaviors in a given situation. Furthermore, the T-F-A triangle provides a practical aid to assist counselors in determining intervention strategies for the individual client (Hutchins, 1986).

Instrumentation

Five different inventories were incorporated into this study. The inventories used were the Jenkins Activity Survey (Form C), the Hutchins Behavior Inventory (HBI), the Adjective Check List (ACL), the Ways of Coping Scales, and a Health Questionnaire. These instruments were chosen because they provided objective measures of the constructs involved in this study.

Jenkins Activity Survey (Form C) - The JAS developed by Jenkins, Zyzanski, and Rosenman (1979), is the latest version of a 52 item self-report questionnaire designed to measure the Type A behavior pattern (see Appendix B). The JAS yields continuous scores on the A-B dimension ranging from A1 to B4 along with three factor scores:

Factor H - Hard-driving, Competitiveness

Factor S - Speed and Impatience

Factor J - Job Involvement

Administration - JAS can be administered to individuals or groups and is suitable for currently or recently employed

adults who can read at the eighth-grade level or better. Most subjects complete the JAS in 15 to 20 minutes.

Scoring - Each response is assigned numerical points based upon optimal weight for that response. The sum of the points for all items constitutes the raw score.

Norms - Normative data are based on a 2,588 male sample drawn exclusively from individuals in middle and upper echelon jobs. Scores were normalized with the mean set at zero and a standard deviation of ten points. Scores on the plus side indicate Type A behavior and scores on the minus side indicate a Type B inclination. Percentile rankings are also provided.

Reliability - Test-retest reliabilities at four to six month intervals range from .65 to .82 on the four factors, with internal consistency ranging from .73 to .85.

Validity - The construct underlying the test has some intuitive logic as well as empirical support (see Feinleib, Brand, Remington, & Zyzanski, 1977).

The Hutchins Behavior Inventory - The HBI evolved from the Thinking-Feeling-Acting (T-F-A) System, a metatheoretical model that enables counselors to intentionally integrate theory and techniques with each client's behavior in a specific situation, so as to enhance the effectiveness of the counseling process (Hutchins, 1984). The HBI takes approximately ten minutes to complete and consists of 75

pairs of words that measure Thinking, Feeling, and Acting behavior for a given situation (see Appendix C). The results of the HBI are indicated in several ways. For this study the T-F-A profile scores will be used to assess an individual's behavior patterns. These scores indicate the relative frequency with which the individual selected a word from each of the two dimensions on the 75 pairs of items, as well as how characteristic the particular behavior is for an individual in a given situation.

Seven day test-retest reliability coefficients range from .71 to .93. Internal consistency ranges from .78 to .98. Initial evidence of validity is also good (Walker, 1984). In factor analyzing components of the HBI, elements loaded highly on the thinking, feeling, and acting dimensions (Wheeler, 1986).

The Adjective Check List - The ACL is a self-report measure that consists of 300 adjectives which may be marked if characteristic of an individual (see Appendix D). The 300 items in the list appear to be sufficient to permit attention to the nuances as well as to major factors that are traditionally used to distinguish between one person and another (Gough & Heilbrun, 1983). The instrument may be administered individually or in a group. The ACL provides 37 scales, many of which are based upon Murray's (1938) need-press system. Selected personality characteristics were

assessed by the following ACL scales: aggression, dominance, achievement, exhibition, autonomy, and endurance. Test-retest and internal consistency data are reported for each sex on the 37 scales in the 1983 edition of the ACL Manual. The test-retest median was .76 for males.

Ways of Coping Scales - This is a 66-item self-report measure of typical cognitive and behavioral strategies people use to manage stressful situations (see Appendix E). Each item is answered based upon a four point Likert scale (0 = does not apply and/or not used; 3 = used a great deal). Eight scales result from factor analytic procedures:

1. confrontive coping
2. distancing
3. self-controlling
4. seeking social support
5. accepting responsibility
6. escape-avoidance
7. planful problem-solving
8. positive reappraisal

Health Questionnaire - This health questionnaire was developed by the researcher and consists of 36 items designed to determine demographic information and status of health as related to risk factors involved in coronary heart disease (see Appendix H).

Scoring of the Tests

The Hutchins Behavior Inventory, and the Demographic/Health Questionnaire were computer scored at Virginia Tech's Research and Measurement Department. The Adjective Checklist was computer scored by Consulting

Psychologists Press. The results of the Jenkins Activity Survey and The Ways of Coping Scales were tabulated by the researcher.

Research Questions and Analyses of Data

The purpose of this study was to examine the relationships among T-F-A behavior patterns, Type A/B behavior, and situational stress. Two objectives pertained to this purpose. The first objective was to investigate the relationships among T-F-A patterns, traditional personality characteristics, and Type A/B behavior. The second objective was to investigate the relationships among T-F-A patterns, coping strategies, and Type A/B behavior. Three research questions were developed to address these objectives.

Each separate research question is set forth below, along with the type of data analysis procedure that was used to generate evidence aimed at answering the question.

1. In response to stress, what T-F-A patterns emerge across the A-B continuum for a group of employed males?
 - a. Do individuals classified by T-F-A patterns differ from each other on measures of Type A/B behavior?
 - b. Do individuals classified by T-F-A patterns differ from each other on the factor scores of the Jenkins Activity Survey?

To answer this question, a cross-tabulation of T-F-A group by Type A/B behavior was performed to determine the number and percentage of men in each T-F-A group who were Type A or Type B. A one-way ANOVA was run to determine if there were significant differences across the T-F-A groups on Type A/B behavior. Bartlett's Box F was used to examine the homogeneity of cell variance for these and all ANOVA's included in this study. All data supported the assumption of equal variances for all the analyses. A one-way MANOVA was performed to determine whether individuals classified into one of the four T-F-A groups differed significantly on the factor scores.

2. Do individuals classified by T-F-A patterns differ from each other on measures of Type A/B behavior when controlling for selected personality characteristics?

To answer this question, an analysis of covariance evaluated the differential effects of T-F-A group on Type A/B behavior adjusted for personality characteristics.

3. Do individuals classified by T-F-A patterns differ from each other on measures of Type A/B behavior when controlling for coping strategies?

To answer this question, an analysis of covariance evaluated the differential effects of T-F-A group on Type A/B behavior when adjusted for coping strategies.

CHAPTER FOUR

Results

Demographic Data

Ninety-five questionnaires were distributed to male members of service organizations who volunteered to complete the questionnaires and return them at their next organizational meeting. Seventy-seven were returned in usable condition. The subjects were predominately white (98%), married (83%), and under the age of 44 (69%). Forty-three percent of the men's ages fell between 34 and 43 years old. All of the subjects were employed. Approximately one half had attended graduate or professional school. Generally, the group was a healthy one. Only five percent had been diagnosed as having had a heart attack. Only about twelve percent had been diagnosed as having high cholesterol. Almost eighteen percent had high blood pressure. Eighty percent of the group did not smoke cigarettes. See Table 1 for descriptive characteristics of the subjects.

Table 1

Descriptive Characteristics of Subjects

<u>Age</u>	<u>Frequencies</u>	<u>Percent</u>
23-33 Years	20	26.0%
34-43 Years	33	42.9%
44-53 Years	12	15.6%
54-63 Years	12	15.6%
<u>Marital Status</u>		
Single	9	11.7%
Married	64	83.1%
Divorced/Separated	4	5.2%
<u>Education</u>		
High School grad or below	7	9.1%
Some College/Business/Technical School	15	19.5%
4 Year College Degree	17	22.1%
Some Graduate School/Graduate Degree	38	49.4%
<u>Family Income</u>		
Below \$15,000/yr.	2	2.6%
\$15,000-\$25,999/yr.	9	11.8%
\$26,000-\$35,999/yr.	20	26.3%
\$36,000-\$45,999/yr.	12	15.8%
\$46,000-\$55,999/yr.	15	19.7%
\$56,000 and over/yr.	17	22.4%
<u>Heart Attack</u>		
No	72	94.7%
Yes	4	5.3%
<u>High Cholesterol</u>		
No	67	88.2%
Yes	9	11.8%

Table 1 continued

<u>Hypertension</u>	<u>Frequencies</u>	<u>Percent</u>
No	59	80.8%
Yes	13	17.8%
<u>Cigarettes</u>		
No	62	80.5%
Less than 10 a day	2	2.6%
10-19 a day	3	3.9%
20-30 a day	7	9.1%
over 30 a day	3	3.9%

Behavior Classifications

The HBI was used to make classifications as to behavior patterns in response to stress. Four behavior groups were identified and their scores were compared on the JAS subscales which include Speed and Impatience, Job Involvement, and Hard-driving Competitiveness, and on the JAS Type A/B scores when controlling for selected personality characteristics as well as coping strategies. Table 2 reports the means and standard deviations on all the factors used to compare the four behavior groups.

Table 2
HBI Group Means and Standard Deviations for Variables Included in the Study

<u>Variable</u>	<u>TF/FT</u>		<u>TA/AT</u>		<u>FA/AF</u>		<u>TFA</u>	
	<u>Mean</u>	<u>Standard Deviation</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Mean</u>	<u>Standard Deviation</u>
AB	3.27	11.17	5.47	8.85	5.18	7.85	1.27	10.46
Speed & Impatience	4.10	14.55	5.04	9.84	6.54	9.90	2.29	11.50
Job-Involvement	1.61	6.73	6.96	7.99	2.50	7.08	0.96	10.75
Hard-driving	-0.66	10.87	1.41	10.03	-0.78	9.59	-0.70	8.46
Achievement	52.20	13.70	59.21	6.88	53.36	8.33	54.55	9.54
Dominance	49.10	17.74	60.12	7.07	54.21	8.74	54.55	7.88
Endurance	55.50	9.30	54.42	6.67	50.43	8.10	52.70	7.20
Exhibition	41.20	11.40	52.97	8.07	50.21	5.87	51.80	5.37
Autonomy	41.00	9.70	51.03	8.70	46.71	7.49	48.30	9.46
Aggression	44.00	15.51	55.18	10.81	51.00	6.67	51.70	11.37
Confrontive	3.70	2.31	5.76	2.91	5.50	2.79	4.45	2.85
Distancing	6.40	4.32	3.97	2.82	4.43	2.68	4.45	2.85
Self-controlling	10.80	2.48	8.84	3.86	8.28	3.95	8.50	4.35
Social Support	5.60	2.95	6.70	2.93	6.00	3.28	6.00	3.60
Responsibility	3.90	1.66	2.70	2.04	3.57	2.68	3.60	2.37
Escape-Avoidance	4.70	2.67	3.27	2.67	3.64	2.40	2.55	2.64
Problem-solving	10.00	3.30	11.42	3.02	10.86	3.37	11.15	3.47
Reappraisal	7.10	3.57	6.24	4.37	7.21	4.77	6.10	4.63

Research Question One

The first research question examined the relationship between T-F-A behavior patterns and Type A/B behavior. This question sought to determine what T-F-A behavior patterns would emerge when men, classified as Type A or Type B, responded to the HBI for a stressful work situation. The procedure used to answer this question involved the cross-tabulation of the four behavior pattern groups by Type A-B classification. Table 3 contains the results of this procedure.

Table 3

Cross-tabulation: HBI Groups by JAS Type

	<u>HBI Group</u>				<u>Row Total</u>
	<u>TF/FT</u>	<u>TA/AT</u>	<u>FA/AF</u>	<u>TFA</u>	
Type A	7 9.33%	24 32%	12 16%	12 14.67%	54 72%
Type B	3 4%	8 10.67%	2 2.6%	8 10.67%	21 28%
Column Total	10 13.33%	32 42.67%	14 18.67%	19 25.34%	75 100%

Frequency missing = 2

Note: Two individuals obtained JAS scores of 0; consequently they could not be placed dichotomously into Type A or Type B classifications. However, the scores of these individuals were included in the ANOVA which is based on continuous data.

A one-way ANOVA using the actual Type A/B mean scores on the Jenkins Activity Survey was subsequently performed to determine whether the four T-F-A behavior groups differed significantly from each other regarding Type A-B behavior. A significance level of .05 was selected. The means and standard deviations for each of the four T-F-A groups were presented in Table 2.

The results of the one-way ANOVA indicated that the differences among the JAS mean scores on Type A/B behavior for the four HBI behavior pattern groups were not significant ($F=.91$, $df=3/73$, $p=.4383$). Thus the null hypothesis was not rejected at the .05 level of significance.

A one-way MANOVA, using the HBI behavior groups as the independent variable and the scores on the JAS factor of Speed and Impatience (S), Job Involvement (J), and Hard-driving Competitiveness (H) as the dependent variables, was performed to determine whether differences existed across the four T-F-A behavior groups on the Jenkins Activity Survey factor scores. No significant differences were found at the .05 level among the HBI behavior groups for the JAS factor scores ($F=.82$, $df=12/185$, $p=.6293$).

Research Question Two

This question examined whether differences existed across the four HBI groups on Type A/B behavior when controlling for selected personality characteristics. An analysis of covariance was performed using the HBI group as the independent variable, the Type A/B score on the JAS as the dependent variable and the scores on the Adjective Check List as the covariates. F-test analyses of the residual variance, once the covariates were removed failed to reject the null hypothesis of no difference between the T-F-A groups. Table 4 illustrates these F values and indicates that no single covariate when treated individually was a factor.

Table 4

Residual Variance Without ACL Covariates

<u>Source</u>	<u>DF</u>	<u>Type III SS</u>	<u>F Value</u>	<u>PR > F</u>
HBI Patterns	3	332.44	1.90	0.14
Achievement	1	192.79	3.31	0.07
Dominance	1	1.12	0.02	0.89
Endurance	1	20.41	0.35	0.56
Exhibition	1	1.96	0.03	0.85
Autonomy	1	88.12	1.51	0.22
Aggression	1	67.01	1.15	0.29

p > .05

Table 5, which shows the Pearson product moment correlations among the ACL personality characteristics, indicates that many of these variables are moderately to strongly correlated. This suggests that the significance of the overall model ($F= 5.45$, $df= 9/67$, $p= .0001$) resulted from the intercorrelations of the covariates rather than the differential effects of the T-F-A pattern groups.

Table 5

Intercorrelations Among ACL Variables and A/B

<u>Variable</u>	1	2	3	4	5	6	7
1. Achievement	-	.821	.650	.437	.332	.408	.463
2. Dominance	.821	-	.341	.733	.585	.691	.524
3. Endurance	.650	.341	-	.036	-.246	-.152	.074
4. Exhibition	.437	.733	-.036	-	.627	.720	.399
5. Autonomy	.332	.585	-.246	.627	-	.833	.499
6. Aggression	.408	.691	-.152	.720	.833	-	.532
7. A/B	.463	.524	.074	.399	.499	.532	-

Research Question Three

This question examined whether significant differences exist across HBI groups on Type A/B behavior when controlling for coping strategies.

Table 6 shows the results of the F-test analyses of the residual variance once the coping covariates were removed. Planful problem-solving and positive reappraisal are shown to have some relationships to the dependent variable.

Table 7 shows the intercorrelations of the coping scales. Unlike the ACL variables, these scales show only low to moderate correlations with each other.

Table 6

Residual Variance Without Coping Covariates

<u>Source</u>	<u>DF</u>	<u>Type III SS</u>	<u>F Value</u>	<u>PR > F</u>
HBI Patterns	3	179.15	0.75	0.53
Confrontive				
Coping	1	222.96	2.78	0.10
Distancing	1	135.45	1.70	0.19
Self-				
Controlling	1	72.01	0.90	0.35
Seeking Social				
Support	1	9.40	0.12	0.73
Accepting Re-				
sponsibility	1	13.26	0.17	0.68
Escape-				
Avoidance	1	21.45	0.27	0.61
Planful				
Problem-				
Solving	1	342.76	4.30	0.04
Positive Re-				
appraisal	1	523.66	6.56	0.01

p= .05

Table 7

Intercorrelations Among Coping Variables and A/B

<u>Variables</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
1. Confrontive Coping	-	.255	.348	.481	.463	.216	.267	.429	.206
2. Distancing	.255	-	.552	.224	.504	.426	.073	.524	.173
3. Self-Controlling	.348	.552	-	.497	.441	.370	.286	.636	.018
4. Seeking Social Support	.481	.224	.497	-	.331	.085	.324	.566	.062
5. Accepting Responsibility	.463	.504	.441	.331	-	.361	.180	.539	.004
6. Escape-Avoidance	.216	.426	.370	.085	.361	-	-.201	.239	.002
7. Planful Problem-solving	.267	.073	.286	.324	.180	-.201	-	.373	.199
8. Positive Reappraisal	.429	.524	.636	.566	.539	.239	.373	-	-.149
9. A/B	.206	.173	.018	.062	.004	.002	.199	-.149	-

CHAPTER FIVE

Summary, Conclusion, Implications, and Recommendations

Summary of the Results

The purpose of this study was to identify possible relationships among T-F-A behavior patterns, coping strategies, and selected personality characteristics as they pertain to the Type A/B behavior pattern. The study employed the T-F-A System as a conceptual framework for understanding the Type A/B behavior pattern in a group of 77 employed men who were members of community service organizations. All the men in this study were instructed to respond to a self-identified stressful work situation. These men were classified on the basis of their HBI responses to this self-identified stressful work situation and placed into one of four T-F-A pattern groups: 1) TF/FT, 2) TA/AT, 3) FA/AF, 4) TFA. Their scores on measures of Type A/B behavior, personality characteristics, and coping strategies were compared to delineate differences across these behavior groups.

Three research questions guided this study. The first research question examined what T-F-A behavior pattern groups emerged across the A-B continuum and whether significant differences existed across the T-F-A groups on measures of Type A/B behavior, Speed and Impatience, Job-Involvement, and Hard-driving Competitiveness. The second research question

addressed the issue of group differences across T-F-A behavior pattern groups for Type A and Type B individuals when controlling for personality characteristics. The third research question addressed group differences across T-F-A behavior patterns groups for Type A and B individuals when controlling for coping strategies. A summary and discussion of the results of these three research questions follow:

Behavior Patterns Present in the Group

Seventy-two percent (72%) of the men in this study were classified as Type A and 28% as Type B by the Jenkins Activity Survey. Jenkins (1985) notes that recent studies routinely report rates of Type A behavior in excess of seventy percent, although earlier studies reported Type A behavior in roughly fifty percent of the population. Consequently, the results of this study appear to be in line with recent trends.

No significant differences were found across the four T-F-A groups on Type A/B behavior or on any of the JAS subscales which included Speed and Impatience, Job-Involvement, and Hard-driving Competitiveness. The largest number of men (42.67%) reported a TA/AT behavior pattern in response to a stressful work situation. Approximately one fourth of the men (24%) reported a TFA behavior pattern. Almost 19% of the men reported a FA/AF behavior pattern. The TF/FT pattern was reported in response to stress by about

thirteen percent (13%) of the men in the study. This response pattern was the least prevalent one for both Type A and Type B individuals.

Since Type A and Type B individuals cannot be differentiated by their TFA behavior patterns in response to stress, it can be speculated that properties inherent in the situation may be most salient. All the men in this study were instructed to respond to a stressful work situation. It was reasoned that Type A individuals would respond to the perceived challenge in a self-identified situation with similar behavior. However, some Type A and Type B men may have chosen to respond to situations that contained more similar properties than those situations chosen by two Type A men. It can be reasoned that both Type A and Type B men responded most frequently with thinking and acting behaviors due to the nature of the situations that they identified.

Another reason that both Type A and Type B individuals may have responded with thinking and acting behaviors is that men are enculturated to control their feelings. Thinking and acting behaviors may be more socially acceptable in the work environment. Hence, both groups of men chose to present themselves according to socially valued standards. While not statistically significant, three times as many men classified as Type A as those classified as Type B reported a TA/AT pattern. In fact, the TA/AT behavior pattern was the most

prevalent response for the Type A men in this study. This may indicate more concern on the part of Type A's than Type B's to conform with societal demands. Price (1982) suggests that many of the Type A behavioral components, such as achievement striving, competitiveness, and accelerated pace are demonstrated in order to gain approval. Glass (1977) asserts that Type A's assessed by the Jenkins Activity Survey work hard to succeed, conduct activities at a rapid pace, and suppress feelings such as fatigue in order to maintain control over stressful aspects of their environment. Since individuals displaying the TA/AT pattern place little emphasis on emotionality, feelings may be viewed as something to be controlled or suppressed so as not to get in the way of planning and action.

No significant differences were found at the .05 level across the four T-F-A pattern groups for Type A/B behavior or for any of the three subscales: Speed and Impatience, Job Involvement and Hard-driving Competitiveness. This suggests that the T-F-A behavior patterns as measured by the HBI do not differentiate Type A/B behavior nor any of the components of this construct when measured by the JAS.

Differences When Controlling for Personality Traits

Statistical analysis failed to reject the null hypothesis of no difference between the T-F-A pattern groups when controlling for the effects of the selected personality

characteristics. Consequently, the information obtained from the HBI regarding T-F-A behavior patterns does not add to the understanding of Type A/B behavior. It should also be noted that the personality characteristics of achievement, dominance, exhibition, autonomy, and aggression only showed moderate correlations with Type A behavior. Previous studies by Rahe et al. (1978) and Chesney et al. (1981) showed higher correlations but used the Structured Interview as a measure of Type A behavior. Apparently, correlations with the ACL are not as strong when the JAS is used to measure Type A behavior.

Differences When Controlling For Coping Strategies

No significant differences were found across the T-F-A groups when controlling for coping strategies. It should be noted that subjects reported difficulty in completing this instrument, and stated that the coping strategies suggested did not fit the situations which they had in mind. Since the subjects were instructed to use the same stressful situation for this instrument and the HBI, it appears that once again the situations reported by the Type A and Type B men may have had similar properties. Consequently, the coping strategies used by Type A and Type B individuals may be more dependent on the situation rather than the components thought to differentiate Type A and Type B behavior. Vickers et al. (1981) suggested that Type A individuals may exhibit poor

coping mechanisms only in specific situations that activate the Type A behaviors. Several studies have found that the differences between Type A and Type B subjects were more pronounced under high stress than low stress conditions (Friedman and Rosenman, 1974; Dembroski and MacDougall, 1978). Hence, the situations presented by the Type A subjects may not have differed in intensity of stress in such a way as to delineate differences across the T-F-A pattern groups on Type A/B behavior. At any rate, no relationship among T-F-A patterns, Type A/B behavior and coping strategies could be discerned.

Conclusions

All T-F-A behavior patterns were represented when these subjects were asked to respond to a self-identified stressful work situation. It can be reasoned that people react to life situations idiosyncratically in terms of the meaning of those situations to them. Since the situation was not held constant, it is difficult to determine whether properties inherent in the situation resulted in both Type A and B individuals responding with TA/AT behaviors more frequently or whether these responses were a result of factors within the individual or a combination of situational and individual factors. Certainly, this study found that the Type A/B classification is not related to any T-F-A classification. Therefore, it would appear that knowing whether a person is

Type A or Type B would not enhance the predictability of situational behavioral responses. Likewise, knowing a person's T-F-A orientation in a stressful situation will not predict Type A/B behavior. Nevertheless, it remains to be seen as to whether treatment of situationally specific behaviors within the T-F-A framework will be useful in treating CHD.

Implications for Intervention

Price (1982) notes that the ultimate goal of a useful model of Type A behavior is to suggest intervention strategies for helping people to alter their Type A behavior so as to reduce their risk of CHD. Furthermore, she believes that a comprehensive framework needs to be developed in order to understand the unique profile of Type A behaviors and characteristics present in each individual and to develop effective treatment programs.

This study proposed that the T-F-A System might provide this conceptual model for understanding the behavioral response patterns of Type A and Type B individuals. If these patterns could be shown to be correlated with particular T-F-A groups, then intervention strategies for working with Type A individuals might be clarified. For example, treatment strategies based upon (a) scores on the various underlying personality characteristics, (b) scores on the various dimensions of Type A/B behavior, (c) and scores on the HBI

for the particular T-F-A pattern expressed in various types of arousing situations, could be devised.

Since Type A individuals are described as not being aware of many of their characteristics, this profile technique would be beneficial in that in addition to tailoring therapeutic strategies, it could be used to assess the changes that occur in treatment. Since the T-F-A System provides a graphic representation of change, the profile technique would help in maintaining client awareness of particular problems and progress in treatment.

Carver, Diamond, and Humphries (1985) state that the lack of reliable instruments to detect treatment changes in Type A behaviors has been one of the difficulties with the intervention trials to date. The ultimate criterion for treatment is the reduction in risk for CHD. Because evaluation with respect to this criterion is quite difficult, most researchers have settled instead for changes in subjects' Jenkins Activity Survey or Structured Interview responses, or changes in physiological indices believed to be relevant to the pathogenesis of coronary heart disease (Carter, Diamond, and Humphries, 1985). Chesney (1978) reports that the Jenkins Activity Survey contains items that pertain to a person's past history and therefore cannot change with intervention. Roskies (1980) has found that the Structured Interview is insensitive to variation within the

Type A/B categories and may not detect changes less than a full-scale conversion from Type A to Type B. Roskies (1980) also notes that examining Type A improvement from a physiological perspective requires expensive and difficult procedures. Another concern, as pointed out by Chesney (1978), is that Type A carries coronary risk independent of many physiological factors and thus, it may be possible to demonstrate physiological changes without eliminating Type A related risk.

Since no relationships among the variables in this study could be identified, intervention based upon the described profile technique would not appear to alter Type A behavior. It should be noted that one of the key elements of the T-F-A System is that treatment is prescribed on an individual and situational basis. If future research would reveal a relationship between Type A behavior and a given T-F-A pattern, it might help researchers to better clarify the Type A/B construct. However, it remains to be seen whether this information would enhance treatment. Martin (1990) suggests that knowing that a particular psychological intervention is effective on the average for a group of individuals offers no guarantee that the same intervention will be effective for a particular individual. Therefore, clinicians should show caution in prescribing any treatment based upon a diagnosis

or classification without considering the uniqueness of the individual.

Discussion

This study focused on providing a methodology to assess and treat Type A behavior. The model that was hypothesized combined several assessment measures in an effort to clarify key elements in the Type A behavior construct.

Matthews (1982) notes that whenever a single test is used to represent a construct in studies that are intended to elaborate on the construct's nomological network, confusion results because no test is a pure exemplar of the construct. To rectify this situation Matthews (1982) suggests that several instruments be used to measure Type A behavior. Likewise, the Review Panel on Coronary Heart Disease (1981) reports that since Type A behavior is conceptualized as the result of a predisposition stimulated by appropriate environmental challenges, then it would appear appropriate to divide the assessment task into three components: (a) the relevant personality disposition, (b) the challenges and demands emanating from the various specific environmental life settings, and (c) the actual behavior that occurs in these settings.

Therefore, it was conceptualized that by examining the role of personality characteristics, coping strategies and the T-F-A behavior responses of Type A and Type B individuals

in a stressful situation, this study would provide a first step toward the effective assessment of the Type A/B constructs as suggested by the Review Panel.

The results of this study indicate that assessment of Type A/B behavior with the HBI either singularly or in combination with the Adjective Check List or the Ways of Coping Scales did not distinguish the components of Type A/B behavior. A major limitation of this investigation needs to be noted to better evaluate the results. Each subject was asked to respond to a self-identified stressful work situation rather than one common to all the subjects. It was reasoned from the literature that Type A individuals would respond to any stressful situation with similar behaviors and that these behaviors would differ from those of Type B individuals. Furthermore, the researcher wanted to refrain from the second-guessing kinds of situations that individuals view as stress-producing. Consequently, the properties inherent in the situation were not controlled. Thus, interpretation of the results was difficult.

Recommendations for Further Research

The Type A behavior pattern is a complex environment - behavior - physiology - personality construct. Certainly, the most critical research involving the Type A behavior pattern will be in determining the pathogenic components. As physiological assessment becomes more sophisticated, studies

should be undertaken to determine the relationships among biochemical, genetic, and psychological variables as they relate not only to CHD but to disease in general. The role that the affirmation of one's feelings plays in protecting against disease as well as the role that the lack of affirmation plays in the incidence of disease should be examined. Studies are also needed that will ascertain the relationships among gender, ethnicity, Type A behavior, and CHD. Finally, once the core components of the Type A behavior construct are identified and they can be accurately assessed in women and minorities, studies are needed that will address the effectiveness at mitigating the risk imposed by psychological factors for CHD.

Serendipitous Findings

The potential role of psychological factors in the genesis of disease has not been without controversy. Factors that have been linked to a specific disease often fail to be predictive of that disease over time. For example, Matthews (1982) notes that the link between Type A behavior and CHD has been tenuous in studies published since 1977. One has to wonder about the reasons why psychological correlates of disease do not stand the test of time. Ethnologists might posit that cultural changes may have influenced the meaning that society now gives to the psychological factors associated with a particular illness. Methodologists might

suggest that the assessment of these factors has changed and consequently, what is now being measured differs from what was measured in the past. Skeptics might believe that there never were correlations in the first place.

The emerging field of psychoneuroimmunology has suggested that disease is multi-factoral in origin and results from the interrelationships among genetic, biochemical, and behavioral-emotional factors. The assumption that particular psychological factors are etiologically specific for a given disease seems to be a result of the lack of sophisticated methodology to measure the interrelations of mind and body. What may occur in the development of disease is that thoughts and feelings result in biochemical changes in the body which given a particular individual's genetic endowment may determine a particular disease. The search for a single disease as a result of psychological factors may be futile.

One common thesis regarding the relationships between psychological factors and disease has been the repression or the inappropriate expression of emotion. For example, studies have suggested that patients who repress hostility may suffer from CHD, cancer, or ulcers among other diseases. Jenkins (1975) has noted that determining the ways in which coronary-prone individuals cope with negative feelings may be the most promising avenue for the treatment of CHD. It may

be that determining the role of feelings in the relationship of biochemical and genetic endowment may hold one of the keys in determining and treating all illnesses. Studies into the role of social support and affirmation of feelings may prove useful in determining holistic methods to treat disease.

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APPENDIX A

T-F-A Behavior Dimensions

THINKING ORIENTATION

Thinking persons are characterized by intellectual, cognitively oriented behavior. They tend to behave in logical, rational, deliberate, and systematic ways. They are fascinated by the world of concepts, ideas, theories, words, and analytic relationships. The range of behaviors in this category runs from minimal thought to considerable depth in quality and quantity of thinking.

FEELING ORIENTATION

Feeling persons generally tend to behave in emotionally expressive ways. They are likely to go with their feelings when making decisions: "If it feels good, do it!" The expression and display of emotions, feelings, and affect provide clues to people with a primary feeling orientation. A person's mood can range from angry, anxious, bitter, hostile, or depressed to one of elation, joy, or enthusiasm. One's emotional energy level can vary from low to high.

ACTING ORIENTATION

Acting persons are generally characterized by their involvement in doing things and their strong goal orientation. They are frequently involved with others, tend to plunge into the thick of things. Action types get the job done, one way or another. To them doing something is better than doing nothing; thus, they are frequently involved in a variety of activities.

From D.E. Hutchins (1984). Improving the counseling relationship. Personnel and Guidance Journal, 62, p. 573.

APPENDIX B (continued)

13. Suppose you are to meet someone at a public place (street corner, building lobby, restaurant) and the other person is already 10 minutes late. What will you do?
- Sit and wait
 - Walk about while waiting
 - Usually carry some reading matter or writing paper so I can get something done while waiting
14. When you have to "wait in line" at a restaurant, a store, or the post office, what do you do?
- Accept it calmly
 - Feel impatient but not show it
 - Feel so impatient that someone watching me tell I am restless
 - Refuse to wait in line, and find ways to avoid such delays
15. When you play games with young children about 10 years old (or when you did so in past years), how often do you purposely let them win?
- Most of the time
 - Half the time
 - Only occasionally
 - Never
16. When you were younger, did most people consider you to be
- definitely hard-driving and competitive?
 - probably hard-driving and competitive?
 - probably more relaxed and easygoing?
 - definitely more relaxed and easygoing?
17. Nowadays, do you consider yourself to be
- definitely hard-driving and competitive?
 - probably hard-driving and competitive?
 - probably more relaxed and easygoing?
 - definitely more relaxed and easygoing?
18. Would your spouse (or closest friend) rate you as
- definitely hard-driving and competitive?
 - probably hard-driving and competitive?
 - probably relaxed and easygoing?
 - definitely relaxed and easygoing?
19. Would your spouse (or closest friend) rate your general level of activity as
- too slow—should be more active?
 - about average—busy much of the time?
 - too active—should slow down?
20. Would people you know well agree that you take your work too seriously?
- Definitely yes
 - Probably yes
 - Probably no
 - Definitely no
21. Would people you know well agree that you have less energy than most people?
- Definitely yes
 - Probably yes
22. Would people you know well agree that you tend to get irritated easily?
- Definitely yes
 - Probably yes
 - Probably no
 - Definitely no
23. Would people who know you well agree that you tend to do most things in a hurry?
- Definitely yes
 - Probably yes
 - Probably no
 - Definitely no
24. Would people who know you well agree that you enjoy a "contest" (competition) and try hard to win?
- Definitely yes
 - Probably yes
 - Probably no
 - Definitely no
25. How was your temper when you were younger?
- Fiery and hard to control
 - Strong but controllable
 - No problem
 - I almost never got angry.
26. How is your temper nowadays?
- Fiery and hard to control
 - Strong but controllable
 - No problem
 - I almost never get angry.
27. When you are in the midst of doing a job and someone (not your boss) interrupts you, how do you usually feel inside?
- I feel O.K. because I work better after an occasional break.
 - I feel only mildly annoyed.
 - I really feel irritated because most such interruptions are unnecessary.
28. How often are there deadlines on your job?
- Daily or more often
 - Weekly
 - Monthly or less often
 - Never
29. These deadlines usually carry
- minor pressure because of their routine nature.
 - considerable pressure, since delay would upset my entire work group.
 - Deadlines never occur on my job.

APPENDIX B (continued)

30. Do you ever set deadlines or quotas for yourself at work or at home?

- A No
- B Yes, but only occasionally
- C Yes, once a week or more

31. When you have to work against a deadline, what is the quality of your work?

- A Better
- B Worse
- C The same (Pressure makes no difference.)

32. At work, do you ever keep two jobs moving forward at the same time by shifting back and forth rapidly from one to the other?

- A No, never
- B Yes, but only in emergencies
- C Yes, regularly

33. Are you content to remain at your present job level for the next five years?

- A Yes
- B No, I want to advance.
- C Definitely no; I strive to advance and would be dissatisfied if not promoted in that length of time.

34. If you had your choice, which would you rather get?

- A A small increase in pay without a promotion to a higher level job
- B A promotion to a higher level job without an increase in pay

35. In the past three years, have you ever taken less than your allotted number of vacation days?

- A Yes
- B No
- C My type of job does not provide regular vacations.

36. In the last three years, how has your personal yearly income changed?

- A It has remained the same or gone down.
- B It has gone up slightly (as the result of cost-of-living increases or automatic raises based on years of service).
- C It has gone up considerably.

37. How often do you bring your work home with you at night, or study materials related to your job?

- A Rarely or never
- B Once a week or less
- C More than once a week

38. How often do you go to your place of work when you are not expected to be there (such as nights or weekends)?

- A It is not possible on my job.
- B Rarely or never
- C Occasionally (less than once a week)
- D Once a week or more

39. When you find yourself getting tired on the job, what do you usually do?

- A Slow down for a while until my strength comes back
- B Keep pushing myself at the same pace in spite of the tiredness

40. When you are in a group, how often do the other people look to you for leadership?

- A Rarely
- B About as often as they look to others
- C More often than they look to others

41. How often do you make yourself written lists to help you remember what needs to be done?

- A Never
- B Occasionally
- C Frequently

For questions 42-46, compare yourself with the average worker in your present occupation, and mark the most accurate description.

42. In amount of effort put forth, I give

- A much more effort.
- B a little more effort.
- C a little less effort.
- D much less effort.

43. In sense of responsibility, I am

- A much more responsible.
- B a little more responsible.
- C a little less responsible.
- D much less responsible.

44. I find it necessary to hurry

- A much more of the time.
- B a little more of the time.
- C a little less of the time.
- D much less of the time.

45. In being precise (careful about detail), I am

- A much more precise.
- B a little more precise.
- C a little less precise.
- D much less precise.

46. I approach life in general

- A much more seriously.
- B a little more seriously.
- C a little less seriously.
- D much less seriously.

APPENDIX B (continued)

For questions 47-49, compare your present work with your work setting of five years ago. If you have not been working for five years, compare your present job with your first job.

47. I worked more hours per week

- A at my present job.
- B five years ago.
- C Cannot decide

48. I carried more responsibility

- A at my present job.
- B five years ago.
- C Cannot decide

49. I was considered to be at a higher level (in prestige or social position)

- A at my present job.
- B five years ago.
- C Cannot decide

50. How many different job titles have you held in the last 10 years? (Be sure to count shifts in kinds of work, shifts to new employers, and shifts up and down within a firm.)

- A 0-1
- B 2
- C 3
- D 4
- E 5 or more

51. How much schooling did you receive?

- A 0-4 years
- B 5-8 years
- C Some high school
- D Graduated from high school
- E Trade school or business college
- F Some college (including junior college)
- G Graduated from a four-year college
- H Post-graduate work at a college or university

52. When you were in school, were you an officer of any group, such as a student council, glee club, 4-H club, sorority or fraternity, or captain of an athletic team?

- A No
- B Yes, I held one such position.
- C Yes, I held two or more such positions.

ACL THE ADJECTIVE CHECK LIST



Consulting Psychologists Press
577 College Avenue, Palo Alto, CA 94306

163 moderate	191 quiet	220 shrewd	357 sturdy
164 modest	192 quitting	226 sly	360 timid
165 moody	193 rational	231 silent	369 tolerant
166 nagging	194 restrained	232 simple	376 touchy
167 natural	195 realistic	233 sincere	377 tough
168 nervous	196 reasonable	234 staphed	378 trusting
169 nosy	197 rebellious	235 slow	379 unaffected
168 obliging	198 reckless	236 sly	374 unambitious
161 obnoxious	199 reflective	237 smug	376 unassuming
162 opinionated	200 retained	238 snobbish	378 unscrupulous
163 opportunistic	201 reliable	239 sociable	377 undependable
164 optimistic	202 reserved	240 soft-hearted	378 understanding
166 organized	203 reserved	241 sophisticated	379 unromantic
168 original	204 resourceful	242 spendthrift	380 unscrupulous
167 outgoing	205 responsible	243 spineless	381 unfriendly
168 outstation	206 restless	244 spontaneous	382 unwhitened
168 overbearing	207 roaring	245 spunky	383 unworldly
170 patient	208 rigid	246 stable	384 unkind
171 peacable	209 robust	247 steady	388 unreflexive
172 peculiar	210 rude	248 stern	389 unscrupulous
173 persevering	211 sarcastic	249 stingy	387 unselfish
174 persistent	212 self-centered	250 staid	388 unstable
175 pessimistic	213 self-confident	251 strong	389 unproductive
176 plentiful	214 self-controlled	252 stubborn	388 verbose
177 pleasant	215 self-denying	253 submissive	391 warm
178 pleasure seeking	216 self-giving	254 suggestible	392 wary
179 poised	217 self-punishing	255 sultry	393 weak
180 polished	218 self-seeking	256 superstitious	394 whorly
181 practical	219 selfish	257 suspicious	395 wholesome
182 precise	220 serene	258 sympathetic	396 wise
183 precise	221 sentimental	259 tactful	397 withdrawn
184 prejudiced	222 serious	260 tactless	398 witty
185 preoccupied	223 severe	261 talkative	399 worrying
186 progressive	224 easy	262 temperamental	399 wily
187 prudent	225 shallow	263 terse	
188 quarrelsome	226 sharp-witted	264 thoughtless	
189 queer	227 shiftless	265 thorough	
189 quick	228 show-off	266 thoughtful	

SCORING PRIVILEGE FOR THIS
PREPAID RESPONSE SHEET
EXPIRES ON DECEMBER 31, 1987

APPENDIX E

WAYS OF COPING (Revised)

Please read each item below and indicate, by circling the appropriate category, to what extent you used it in the situation you have just described on the Hutchins Behavior Inventory.

	Not used	Used some- what	Used quite a bit	Used a great deal
1. Just concentrated on what I had to do next -- the next step.	0	1	2	3
2. I tried to analyze the problem in order to understand it better.	0	1	2	3
3. Turned to work or substitute activity to take my mind off things.	0	1	2	3
4. I felt that time would make a difference -- the only thing to do was to wait.	0	1	2	3
5. Bargained or compromised to get something positive from the situation.	0	1	2	3
6. I did something which I didn't think would work, but at least I was doing something.	0	1	2	3
7. Tried to get the person responsible to change his or her mind.	0	1	2	3
8. Talked to someone to find out more about the situation.	0	1	2	3
9. Criticized or lectured myself.	0	1	2	3
10. Tried not to burn my bridges, but leave things open somewhat.	0	1	2	3
11. Hoped a miracle would happen.	0	1	2	3
12. Went along with fate; sometimes I just have bad luck.	0	1	2	3
13. Went on as if nothing had happened.	0	1	2	3
14. I tried to keep my feelings to myself.	0	1	2	3
15. Looked for the silver lining, so to speak; tried to look on the bright side of things.	0	1	2	3
16. Slept more than usual.	0	1	2	3
17. I expressed anger to the person(s) who caused the problem.	0	1	2	3
18. Accepted sympathy and understanding from someone.	0	1	2	3
19. I told myself things that helped me to feel better.	0	1	2	3
20. I was inspired to do something creative.	0	1	2	3
21. Tried to forget the whole thing.	0	1	2	3
22. I got professional help.	0	1	2	3

APPENDIX E (continued)

	Not used	Used some- what	Used quite a bit	Used a great deal
23. Changed or grew as a person in a good way.	0	1	2	3
24. I waited to see what would happen before doing anything.	0	1	2	3
25. I apologized or did something to make up.	0	1	2	3
26. I made a plan of action and followed it.	0	1	2	3
27. I accepted the next best thing to what I wanted.	0	1	2	3
28. I let my feelings out somehow.	0	1	2	3
29. Realized I brought the problem on myself.	0	1	2	3
30. I came out of the experience better than when I went in.	0	1	2	3
31. Talked to someone who could do something concrete about the problem.	0	1	2	3
32. Got away from it for a while; tried to rest or take a vacation.	0	1	2	3
33. Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc.	0	1	2	3
34. Took a big chance or did something very risky.	0	1	2	3
35. I tried not to act too hastily or follow my first hunch.	0	1	2	3
36. Found new faith.	0	1	2	3
37. Maintained my pride and kept a stiff upper lip.	0	1	2	3
38. Rediscovered what is important in life.	0	1	2	3
39. Changed something so things would turn out all right.	0	1	2	3
40. Avoided being with people in general.	0	1	2	3
41. Didn't let it get to me; refused to think too much about it.	0	1	2	3
42. I asked a relative or friend I respected for advice.	0	1	2	3
43. Kept others from knowing how bad things were.	0	1	2	3
44. Made light of the situation; refused to get too serious about it.	0	1	2	3
45. Talked to someone about how I was feeling.	0	1	2	3
46. Stood my ground and fought for what I wanted.	0	1	2	3
47. Took it out on other people.	0	1	2	3

APPENDIX E (Continued)

	Not used	Used some- what	Used quite a bit	Used a great deal
48. Drew on my past experiences; I was in a similar situation before.	0	1	2	3
49. I knew what had to be done, so I doubled my efforts to make things work.	0	1	2	3
50. Refused to believe that it had happened.	0	1	2	3
51. I made a promise to myself that things would be different next time.	0	1	2	3
52. Came up with a couple of different solutions to the problem.	0	1	2	3
53. Accepted it, since nothing could be done.	0	1	2	3
54. I tried to keep my feelings from interfering with others things too much.	0	1	2	3
55. Wished that I could change what had happened or how I felt.	0	1	2	3
56. I changed something about myself.	0	1	2	3
57. I daydreamed or imagined a better time or place than the one I was in.	0	1	2	3
58. Wished that the situation would go away or somehow be over with.	0	1	2	3
59. Had fantasies or wishes about how things might turn out.	0	1	2	3
60. I prayed.	0	1	2	3
61. I prepared myself for the worst.	0	1	2	3
62. I went over in my mind what I would say or do.	0	1	2	3
63. I thought about how a person I admire would handle this situation and used that as a model.	0	1	2	3
64. I tried to see things from the other person's point of view.	0	1	2	3
65. I reminded myself how much worse things could be.	0	1	2	3
66. I jogged or exercised.	0	1	2	3

APPENDIX F

Informed Consent FormPurpose

The purpose of this study is to examine behavior and personality characteristics as they relate to risk factors of coronary heart disease. It is hoped that the results of this study will help in designing interventions that will aid in the treatment and prevention of heart disease.

Procedures

Participants will complete five questionnaires regarding health, behavior and personality. It will require approximately one hour to complete the questionnaires. Each participant will be given a code number so that individuals' names will not appear on the questionnaires. The researchers will maintain a list of names and code numbers in order to facilitate the collection of forms and to provide participants with results of the study. The names of individual participants will never be associated with any written or oral presentation of this project without the expressed written permission of the participant.

This project has been approved by the Human Research Committee at Virginia Polytechnic Institute & State University in Blacksburg, Virginia. Any questions that you might have should be directed to:

APPENDIX F (continued)

Kandyce Meo, Graduate Research Associate (703) 961-5106

or

(304) 363-1263

Dr. David Hutchins, Associate Professor (703) 961-5106

**I have read the above description and agree to voluntarily
participate under these conditions in this research project.**

Participant's Name: (please print) _____

Participant's Signature: _____ Date _____

Address: _____

Phone Number: _____

APPENDIX G

DIRECTIONS FOR CORONARY HEART DISEASE & BEHAVIOR STUDYDIRECTIONS FOR CORONARY HEART DISEASE & BEHAVIOR STUDY

- A. Use a #2 pencil to complete all the questionnaires.
- B. Please read and sign the Informed Consent Form before completing any questionnaires.
- *C. The questionnaires in this packet should be completed in four sessions. It is important that you complete the questionnaires in the following order:
- Session 1. Informed Consent Form & Health Questionnaire
 - Session 2. Hutchins Behavior Inventory (HBI)
 - Session 3. Adjective check List (ACL)
 - Session 4. Jenkins Activity Survey (JAS) and the Ways of Coping Questionnaire.
- D. The questionnaires are coded so DO NOT put your name on them. No other identifying information is needed so read the directions and begin each with question #1.
- E. There are no right or wrong answers.
- F. For the Hutchins Behavior Inventory (HBI) you will have to think of a situation at work when you are stressed and write that situation on the line; for example, "trying to get a report finished before a deadline" or "talking to my boss about a problem." Try to be as specific as possible.
- G. When you complete the Ways of Coping questionnaire, answer it with the same stressful situation in mind that you described on the HBI.
- H. When you finish, please put the questionnaire(s) back in the folder and return it to the staff at the Wellness Center.
- I. You will receive feedback within two months regarding your responses to these questionnaires.
- K. IF YOU HAVE ANY QUESTIONS REGARDING THE COMPLETION OF THESE QUESTIONNAIRES, PLEASE CONTACT KANDYCE MEO OR DR. DAVID HUTCHINS AT THE VIRGINIA TECH COUNSELOR EDUCATION DEPARTMENT 961-5106

Thank you so much for your participation in this project.

*There were two additional sets of directions sequencing the order of the HBI, JAS, and ACL to compensate for Testing bias.

APPENDIX H
HEALTH QUESTIONNAIRE

V P I & S U LEARNING RESOURCES CENTER			ID NUMBER										FORM	STATUS	GROUP		
NAME Health Questionnaire	COURSE	DATE Spring 1987	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
INCORRECT MARKS ● ● X ✓	CORRECT MARK ● ● ● ●	USE NO 2 PENCIL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
<p>Please read each of the following carefully. Choose ONE response for each question. With a number 2 pencil darken the appropriate circle.</p> <p>* Please answer <u>all</u> items. Only one response per line</p> <p>* Note: For questions that require elaboration, write your comments in the space provided.</p>																	
1. ** <u>Example</u> Sex: 1) female 2) male			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
2. Age: 1) under 23 2) 23-33 3) 34-43 4) 44-53 5) 54-63 6) 64 & over			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
3. Race: 1) white 2) black 3) other (please specify: _____)			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
4. Current Marital Status: 1) Single 2) Married 3) Divorced/Separated 4) Widowed			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
5. Highest grade completed in school: 1) high school graduate or below 2) some college, business, or technical school 3) four year college degree 4) some graduate school or grad degree			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
6. Are you currently: 1) working full-time 2) working part-time 3) not employed			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
7. Average yearly family income: 1) Below \$15,000 2) \$15,000 - \$25,000 3) \$26,000 - \$35,000 4) \$36,000 - \$45,000 5) \$46,000 - \$55,000 6) \$56,000 and over			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Have you ever been diagnosed as having:			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
8. Hypertension: 1) no 2) yes			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
9. Heart Attack: 1) no 2) yes			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
10. Stroke: 1) no 2) yes			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
11. High Cholesterol: 1) no 2) yes			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
12. Hardening of the arteries: 1) no 2) yes			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
13. Diabetes: 1) no 2) yes			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
14. Do you smoke cigars or a pipe? 1) no 2) yes			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
15. Do you smoke cigarettes? 1) no 2) less than 10 a day 3) 10-19 a day 4) 20-30 a day 5) over 30 a day			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
16. Are you overweight? 1) no 2) less than 10 lbs overweight 3) 10-19 lbs overweight 4) 20 or more lbs overweight			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
17. Do you engage in a regular exercise program? 1) no 2) less than 3 hours/week 3) 3-5 hours/week 4) 6-9 hours/week 5) 10 or more hours/week			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Have any of your <u>BLOOD RELATIVES</u> been diagnosed as having:			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
18. Heart attack or heart disease: 1) no 2) yes			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
19. Stroke: 1) no 2) yes			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
20. Hypertension: 1) no 2) yes			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
21. High Cholesterol: 1) no 2) yes			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
			22	23	24	25	26	27	28	29	30	31	32	33	34	35	
			36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

OVER PLEASE

APPENDIX H (continued)

During the past 7 days, how many total hours have you engaged in:						
25. Jogging	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	25	1 2 3 4 5 6 7 8 9
26. Calisthenics	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	26	0 0 0 0 0 0 0 0 0 0
27. Cycling	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	27	0 0 0 0 0 0 0 0 0 0
28. Racketball	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	28	0 0 0 0 0 0 0 0 0 0
29. Tennis	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	29	0 0 0 0 0 0 0 0 0 0
30. Swimming	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	30	0 0 0 0 0 0 0 0 0 0
31. Golf	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	31	0 0 0 0 0 0 0 0 0 0
32. Dancing	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	32	0 0 0 0 0 0 0 0 0 0
33. Martial Arts	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	33	0 0 0 0 0 0 0 0 0 0
34. Yoga	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	34	0 0 0 0 0 0 0 0 0 0
35. Weight Training	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	35	0 0 0 0 0 0 0 0 0 0
36. Other:	1) none	2) 1-2 hrs	3) 3-5 hrs	4) 6 or more hrs	36	0 0 0 0 0 0 0 0 0 0
Please specify:					37	0 0 0 0 0 0 0 0 0 0
					38	0 0 0 0 0 0 0 0 0 0
					39	0 0 0 0 0 0 0 0 0 0
					40	0 0 0 0 0 0 0 0 0 0
					41	0 0 0 0 0 0 0 0 0 0
					42	0 0 0 0 0 0 0 0 0 0
					43	0 0 0 0 0 0 0 0 0 0
					44	0 0 0 0 0 0 0 0 0 0
					45	0 0 0 0 0 0 0 0 0 0
					46	0 0 0 0 0 0 0 0 0 0
					47	0 0 0 0 0 0 0 0 0 0
					48	0 0 0 0 0 0 0 0 0 0

APPENDIX I

DESCRIPTIONS OF THE FOUR T-F-A PATTERN GROUPS

Group I - TF/FT

These patterns are typical of those who feel strongly and think a great deal about ideas, people, situations, and events. People who respond with this pattern consider options both logically and emotionally. They are often placed in an emotional bind. They are inclined to fret or worry anxiously about a situation, alternating between thoughts and feelings, caught in a continuing cyclic pattern. While some action may be taken by persons with this pattern, the action is not likely to be consistent. Rather, the action is more likely to be hesitant, erratic, or of short duration.

Group II - TA/AT

People with these patterns show both acting and thinking characteristics. Decisive may best describe these types. Action is coupled with logical, rational thinking. And, thinking results in purposeful action. These people are frequently manipulative and take pride in their ability to outsmart or outmaneuver others. These people tend to be unaware of their feelings or those of others.

Group III - FA/AF

People with these patterns show both acting and feeling characteristics. They thrive on action and feel truly "alive" only when engaged in activities. They often avoid highly cognitive activities. They prefer to solve problems intuitively based upon their feelings about people. They may settle for quick solutions that don't require in-depth evaluation. They have a low tolerance for frustration and have trouble deferring gratification. They may feel something is not right but because they lack well defined cognitive insights they may not know what is wrong. They act to reduce tension but may use poor or hasty judgement.

Group IV - TFA

People with these patterns use all three behaviors, thinking, feeling, and acting in a given situation. One or two behaviors may be slightly stronger than the others but not to any great extent. These people are able to see and respond to all sides of issues. However, at times they may have a values conflict and be unable to make a decision because of the attractiveness of several options.

VITA

Kandyce Kay Meo was born in Fairmont, West Virginia on February 24, 1952. She is a 1974 summa cum laude graduate of Fairmont State college with a Bachelor of Science degree in Psychology. In 1977 she received a Master of Arts degree in Counseling & Guidance from West Virginia University in Morgantown, West Virginia.

Upon completing her undergraduate and graduate degrees, she was employed in social services with the West Virginia Department of Human Services; first as a Day Care Social Worker and subsequently, as a Youth Services Coordinator. From 1980 to 1982, she served as the senior counselor in charge of treatment planning at the first status offender facility in West Virginia, Kappa Sigma Pi-United Presbyterian Youth Home in Clarksburg. In 1982 she became the Director of the Counseling Center at Concord College in Athens, West Virginia.

In 1985, she began the Ed.D program in Counselor Education at Virginia Tech where she served as a graduate assistant for two years. She is currently the Director of Counseling at Clark State Community College in Springfield, Ohio. Requirements for the Doctor of Education were completed in 1990.



Kandyce Kay Meo