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I am submitting herewith a dissertation written by Maria McArthur Abercrombie entitled "Sex-Role Orientation, Achievement Behavior, and Type A Behavior in Employed and Unemployed Women." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

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SEX-ROLE ORIENTATION, ACHIEVEMENT BEHAVIOR, AND TYPE A BEHAVIOR IN EMPLOYED AND UNEMPLOYED WOMEN

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Maria McArthur Abercrombie

December 1983

ACKNOWLEDGMENTS

I am grateful to my parents, Joe and Lea McArthur of Tulsa, Oklahoma, for their support and encouragement during my scholastic years. Thanks to their guidance and influence I will be able to fulfill my career goals and enrich other people's lives through my work as a Clinical Psychologist.

ABSTRACT

The relationships among sex-role orientation, achievement behavior, the extent of Type A behavior pattern and blood pressure were examined in four occupational groups of women (high status male-dominated occupations, high status female-dominated occupations, medium status female-dominated occupations, unemployed housewives). Participants were 80 college educated women between the ages of 30 and 45.

1. The hypothesis that employed women are more nontraditional in sex-role orientation than housewives was not supported as determined by Brogan and Kutner's Sex-Role Orientation scale.

2. The hypothesis that housewives are more feminine in sex-role than employed women, who are more masculine or androgynous in sex-role was supported. Leaving out the 20-25% of the sample classified as undifferentiated in sex-role as determined by Bem's Sex-Role Inventory, 73% of the employed women were classified as androgynous or masculine while 60% of the housewives were classified as feminine in sex-type.

3. The third hypothesis was supported in that employed women reported more personal accomplishments indicative of achievement behavior that were career-related compared to the housewife population, who reported more achievements related to home, affiliation and family activities. The employed women were found to achieve in both occupational and domestic spheres.

4. The other achievement behavior hypothesis was not supported. The high status employed women did not display more assertive competence motivation than the medium status employed women as determined by

Veroff, McClelland and Ruhland's Assertive Competence Motivation questionnaire. The medium status employed women did not exhibit more of this achievement behavior than the housewives.

5. The fifth hypothesis was in part supported by the findings that women in male-dominated occupations exhibit a more extreme manifestation of the Type A coronary-prone behavior pattern than women in female-dominated occupations as determined by the Jenkins Activity Survey. The sample scored similarly on the other JAS factors and on the Rosenman and Friedman Structured Interview. The women in female-dominated occupations did not exhibit a more extreme manifestation of the Type A behavior pattern than the housewife population.

6. Employed women did not have higher blood pressure than the housewives. Thus, the last hypothesis was not supported.

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CHAPTER I

TYPE A BEHAVIOR PATTERN

A large body of research has been produced focusing on the psychosocial factors that increase the risk of clinical coronary heart disease (CHD). Friedman and Rosenman (1959) observed several prominent features of behavior in their male heart patients and eventually called this behavior complex Type A. The Type A person is characterized particularly by excessive drive, aggression, hostility, ambition, and competitiveness. These persons seem to be always striving to meet vocational deadlines and other pressures with an enhanced sense of time urgency. Type B, on the other hand, is the relative lack of these characteristics.

In this chapter a description of the Type A behavior pattern will be followed by a brief review of the major empirical investigations relating Type A behavior pattern to the incidence of CHD. Mortality due to heart attacks, strokes, and heart disease is the primary cause of death in the United States. Waldron (1976) reported that in the United States mortality is 60% higher for males than for females. Forty percent of the excess male mortality is due to arteriosclerotic heart disease, primarily because men smoke cigarettes more and because they more often develop the aggressive, competitive, Type A behavior pattern. Death rates for arteriosclerotic heart disease, which is primarily CHD, are twice as high for men as for women.

A main issue for the understanding of the association between Type A behavior pattern and the clinical manifestations of CHD concerns

the mechanism underlying this association. Many medical professionals believe that the role of stress and strain becomes important only after already hardened arteries have created the setting for an attack. An alternate view, that I endorse, postulates that Type A behavior pattern plays a role in accelerating the atherosclerotic process itself, and its influence is exerted over an extended period of time. This would mean that early preventive efforts would also be aimed at reducing the intensity of Type A behavior. After briefly discussing the probable mechanisms underlying the association between Type A behavior and the manifestation of CHD, the prominent behavioral correlates of Type A behavior pattern will be examined.

Sparacino (1979) recognized that increasing industrialization and urbanization have created the cultural norms and values that promote an over-reaction to challenge and stress. Type A behavior emerges as the response of a characterologically predisposed person to a challenging situation. There is a recent rise of CHD among women, who now more frequently enter the labor market and confront more stressful work situations. While most of the early studies looked at Type A behavior pattern in the employed, white, male population, I am particularly interested in the incidence of Type A behavior in women. The coronary-prone behavior pattern is characterized by aggressiveness, competitiveness, and other characteristics consistent with the traditional male role. Yet as more women enter the work environment and adopt less traditional roles, their incidence of CHD is expected to increase.

There are currently several methods of assessing this behavior pattern, two of which are relevant to the research to be discussed later. Rosenman and Friedman (Rosenman, Friedman, Straus, Wurm, Kositchek, Haun, and Werthessen, 1964) constructed the Structured Interview (SI) to classify individuals on a dimension of coronary proneness from most coronary prone (A1, A2, B3, B4) to least coronary prone. This ten minute interview is performed by a trained examiner who attempts to elicit particular aspects of the subject's behavioral style. The interviewer rates the subject on loud and explosive speech, rapid and accelerated speech, response latency, hostility, and competition for control of the interview. The 22 questions are designed to elicit from the subject the degree of drive and ambition, past and present competitive, aggressive, and hostile feelings, and the degree and intensity of time urgency. The interview is tape recorded so that the content and vocal stylistics can be assessed at a later date by two trained raters.

Another way of measuring Type A behavior is the Jenkins Activity Survey (JAS) (Jenkins, Friedman, & Rosenman, 1965). This is a paper and pencil self-report test with multiple choice questions. The JAS is based on the conceptual formation of the coronary prone behavior pattern, Type A, as developed by Friedman and Rosenman since 1959. Psychologic and epidemiologic methods were used to develop the test questionnaire and to study its properties in populations. The JAS provides a numerical score for the global behavioral assessment rating (Type A). Component clusters of the behavior pattern such as (1) Speed-Impatience, (2) Job Involvement, and (3) Hard-Driving are also scored.

From the JAS the individual is given a numerical value along a continuum. The cut-off points for behavior pattern are set by the researcher. Seventy percent classification agreement with the SI has been previously reported.

Description

According to Friedman (1969) the Type A behavior pattern refers to "a characteristic action-emotion complex which is 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 the opposing efforts of other things or persons in this same environment" (p. 84). Jenkins (1971) reviewed the primary journal articles pertaining to coronary disease between 1965-1969. He described the behavior pattern as neither a personality trait nor a standard reaction to a challenging situation, but rather the effect of a challenging situation on a characterologically predisposed person.

Suinn (1977) assumed that the Type A behavior pattern is learned just like other habit patterns are learned. Type A characteristics are acquired by individuals partly because our society encourages achievement, competitiveness, productivity, and assertiveness. He noted that the gradual increase in the number of women who are Type A is also evidence of the changing patterns caused by cultural changes. Suinn developed a model of stress related to Type A characteristics. The Type A person responds to stressful situations automatically with their strongest habit pattern, Type A responses. Type A behavior itself is

valued by society and tends to get things done. The behavior is rewarded in two ways. First, it leads to achievement. Secondly, it helps reduce the primary stress situation. Unfortunately, the Type A behavior that has just been reinforced is in itself stress producing. Because of achievement striving, Type A individuals tend to put themselves in situations which involve stress.

Glass (1977) speculated that most Type As are predisposed to the behavior pattern due to genetic factors, including a high level of activity. Whether or not these individuals develop Type A characteristics depends on a number of events. These include parental shaping, sociocultural values reinforced by education, peer pressure, and other factors. He stated that Type A behavior is a learned mode of coping with uncontrollable life stress, but it emerges only in individuals whose genetic makeup makes them susceptible to the relevant shaping processes.

Jenkins (1975) found that Type A behavior manifested itself in values, style of thought, manner of interpersonal relationships, response patterns, gestures and movements, facial expressions, rhythm of breathing, and speed, volume, and modulation of speech. He detailed the characteristics of the Type A individual as follows. In terms of values the Type A person is conscientious and responsible in an intense, inflexible way. He sets high standards for himself and others and is critical of himself and those who fail to meet these demanding standards. He prefers to be respected for what he does, whereas the Type B usually prefers to be loved for who he is. Type As strive

continually to prove their competence and social worth. He has more obvious cravings for recognition and power than the Type B and appears compulsively attracted to competition and challenges. The Type A person has few sources of gratification other than his job and competitive avocational activities. The Type B person, in contrast, has a greater variety of pursuits and finds personal satisfaction in family, friends, hobbies, and spectator sports. While both Type A and B individuals may participate in community activities the Type As are more likely to be found in leadership positions.

In terms of style of thought, Jenkins described the Type A individual as usually pursuing two or three unrelated lines of thought or actions at the same time. They often anticipate what is coming next and often "jump the gun" in an effort to hurry through life. The Type A person looks alert and tense in expression and posture. He is compulsive about getting things done quickly and is often abrasive in social interactions. His competitiveness in everyday tasks makes him see all obstacles as challenges. The Type A individual lacks insight into his own behavior and into the effect he has on others around him. He is very self-oriented and fails to notice the details of his physical and social environment.

In interpersonal relationships the Type A person tends to be self-centered and frequently does not pay attention to what his spouse or co-worker says to him. His narrow range of interests (usually work) makes him appear egocentric. Feelings of anger are easily aroused in Type A individuals as they often perceive situations as blocking or

delaying their activities. He often feels frustrated in his work situation and frequently thinks less of his subordinates because of their slowness or poor quality of their work. The Type A person often is boisterous and expresses an overt bravado. However, it appears that this inflated self-assurance really covers a deep-seated insecurity. When confronted with emotional drain and several repeated defeats the Type A person may reveal the insecurity and inferiority feelings that lie beneath the surface.

The earliest study examining the association between Type A behavior pattern and CHD was Friedman and Rosenman (1959). To test their hypothesis that men selected solely because of their behavior pattern would differ in terms of serum cholesterol level, blood clotting times, and presence of CHD and arcus senilis, Friedman and Rosenman examined three groups of men including 83 Type As, 83 Type Bs, and 46 unemployed blind men (Group C).

Type A men were observed to be chronically harassed by their various commitments, ambitions and drives. An eagerness to compete was observed not only in their daily vocational business activities but also in their avocational pursuits. The Type B men were relatively unconcerned with time urgency, seemed more content with their respective lot in life and were relatively uninterested in pursuing multiple goals or competitive activities. They were far more involved with their families and avocational activities. Group C, the unemployed blind men, exhibited the same behavior pattern found in the Type Bs, but with a prominent feature of anxiety and insecurity.

The Type A men were found to have higher serum cholesterol levels, a quicker clotting time, three times the incidence of arcus senilis than the B or C groups, and seven times the incidence of Coronary Artery Disease (CAD) than the other two groups. These differences cannot be explained by differences in exercise, calorie or fat intake, or cigarette smoking. The results strongly suggested that the behavior pattern exhibited by the Type A men was mainly responsible for their higher serum cholesterol level, faster clotting times, and higher incidence of arcus senilis and CAD.

Major Studies Relating Type A Behavior Pattern and CHD

One of the early attempts to differentiate between Types A and B individuals employed the use of behavioral monitoring of the subject's responses. Friedman and Rosenman (1960) developed a psychophysiological test to detect the coronary-prone behavior pattern associated with a high incidence of coronary artery disease. Twenty patients with clinical CHD, 15 normal subjects, and seven patients with functional cardiovascular disease were monitored as they listened to tape recordings of two monologues frequently interrupting each other. One of the two monologues was presented in a slow, rambling, repetitious manner. The respiratory excursions, body movements, and hand clenching were monitored and graphically recorded as the subjects listened to the two monologues. Friedman and Rosenman found that the group of patients with CHD exhibited respiratory excursions and hand clenching significantly more frequently than the other groups. Thus the group of patients with

CHD exhibited significantly more Type A responses than the other two groups. The researchers suggested that this test could be employed in predictive mass studies.

Following up this result, Rosenman and Friedman thought it would be scientifically productive to conduct a longitudinal study observing a large group of men who were apparently free of CHD but who also exhibited behavior pattern Type A. Other men, not classified as Type A, would be studied also for control purposes. They reasoned that if Type A does have a causative relationship, then a higher incidence of new CHD should occur in the Type A men compared to the Type B individuals. This study (Rosenman, Friedman, Straus, Wurm et al., 1964), the Western Collaborative Group Study, began in 1960. The male subjects, aged 39-59, were recruited from 10 California companies. The 3154 men were followed for an average of 8.5 years. In June 1960 through December 1961 the men were evaluated for personal history including past illnesses and medications, parental longevity and illness. Socio-economic history was obtained. Other personal habits such as incidence of smoking, drinking and exercise were also obtained.

Blood studies and blood pressure readings were recorded. The Type A behavior pattern was assessed by a tape recorded interview. The men were classified into four groups, A1 = fully developed, A2 = less developed Type A, B3 = less developed Type B, B4 = fully developed Type B. The predictive classification rated Type A1 as most likely to be at risk for CHD, and B4 as least likely at risk. Of the total subject population free from CHD at intake ($\underline{N}$ = 3411), 1771 (52%) were

classified as Type A and 1640 (48%) were classified as Type B. The participants were divided into two age groups: 39-49 (N = 2416) and 50-59 (N = 955). At intake manifest CHD was observed in 113 men who were then eliminated from the prospective study. Seventy percent of these men had been classified as Type A.

Rosenman, Friedman, Straus, Wurm, Jenkins, Messinger, and Kositchek (1966) presented the findings of the first 2½ years of follow-up during which 70 men developed manifest CHD. Fifty-two subjects suffered a myocardial infarction (MI), and 18 experienced, for the first time, the symptoms of angina pectoris (AP). The MI was fatal in nine cases and was "silent" in 17 of the 52 men. Eight of the nine deceased men had been classified as Type A.

Rosenman, Brand, Jenkins, Friedman, Straus, and Wurm (1975) reported that data from the 8½ year follow-up included a total of 3154 men. During this time manifest CHD occurred in 257 men, 178 of whom were classified as Type A. This resulted in the fact that Type A men exhibited 2.37 times the rate of new CHD compared to the men classified as Type B. The death rate per 1000 person-years was 2.92 for Type A and 1.32 for Type B for CHD causes.

The researchers found that education level was inversely related to CHD in both age groups. Men with a history of parental CHD and those with reported diabetes each exhibited higher CHD incidence in both age groups. Occupational-physical activity was not associated with differences in CHD rates. Smoking habits were related to CHD incidence with higher rates for cigarette smokers in both age groups. The rates

of CHD were significantly related to reported daily amount smoked at intake.

Average systolic and diastolic blood pressure, serum levels of cholesterol and triglycerides, and lipoprotein ratios were significantly higher in subjects of both age groups who later had CHD, compared to the non-CHD population. The Type As showed significantly higher rates of CHD than the Type Bs.

A statistical procedure was performed to adjust for parental history of CHD, current cigarette usage, systolic and diastolic blood pressure, serum levels of cholesterol and triglyceride, and lipoprotein ratios. Thus the behavior pattern-CHD relationship for the younger group was a risk factor of 2.21 before adjustment and 1.87 after adjustment for the other risk factors. For the older group, the ratio was 2.31 before adjustment and 1.98 after adjustment. The researchers concluded that the predictive relationship of the behavior pattern for the CHD incidence could not be accounted for by other risk factors. Forty-one men suffered a second MI, 34 of whom were classified as Type A. Thus Type A men who had suffered a MI were five times as likely to suffer another MI as the Type B men.

Rosenman, Brand, Sholtz, and Friedman (1976) used the multiple logistic risk analysis to evaluate the prospective factors from the 8.5 year Western Collaborative Group Study (WCGS). This overall analysis provides a screening procedure for identifying risk factors that show the strongest association with the incidence of CHD. The factors found to be strongly related to the incidence of coronary disease were serum

cholesterol, behavior pattern, cigarette smoking and systolic blood pressure in both age groups, and age and corneal arcus in the younger age group. For the younger age group parental history of CHD, education, and beta/alpha lipoprotein ratio also reached near significance levels. Education, body mass index, exercise habits, and age showed almost significant predictive strength in the older group.

Jenkins, Zyzanski, and Rosenman (1976) focused on the 287 men from the WCGS population who survived their first heart attack. Of this group 67 developed a recurrent myocardial infarction (MI) and 220 remained with only the one attack over the follow-up period. Jenkins et al. found three risk factors associated with recurrent MI: serum cholesterol, the number of cigarettes smoked per day, and the Type A score from the JAS. Using Type A as a predictor alone allowed correct classification of 58% of both cases and noncases. This predicted who would develop a second MI. The risk of a second MI went up in a curvilinear fashion, rising by the level of the Type A score in a dose-response relationship. Adding cigarettes as a predictor raised correct classification to 62-63%.

Another study that examined the relationship between Type A behavior and CHD was conducted by Caffrey (1970). Sociopsychological data on 644 males, aged 40-64 years, were evaluated. These subjects were divided into five groups for the analyses: (1) MI cases, (2) Benedictine Priests, (3) Benedictine Brothers, (4) Trappist Priests, and (5) Trappist Brothers. He employed multivariate statistical techniques of analysis of variance, factor analysis, and discriminant

function analysis to control statistically for the possible interrelationships among the variables.

The factor analysis of the 43 × 43 matrix of correlations resulted in a six factor solution which accounted for 40.6% of the total variance. Factor I is clearly a "Responsibility" factor and Factor II is a "Type A Behavior" factor. The remaining factors, personal adjustment, family background, physical activity in work, and physical activity in exercise demonstrate that the sociobehavioral variables assessed in this study were relatively independent of each other. A univariate analysis of variance showed that the five groups differed significantly ($p < .001$) on 37 of the 43 variables, and at a lower level ($p < .05$) on five others. It seems that high or low scores on any of the factors would not alone account for an increased likelihood of having heart disease.

Caffrey described the profile of scores that accounts for the likelihood of having heart disease. The person with heart disease was described as having a Type A personality, a moderately high level of responsibility, comes from a family of lower socioeconomic status, has an occupation that is fairly sedentary, and this person has been used to a good deal of exercise. The results of this study are in agreement with the WCGS which reported higher rates of CHD disease for men who manifested the Type A behavior pattern.

In another study, Wardwell and Bahnson (1973) looked at the incidence of Type A behavior in three samples of men, including coronary patients, hospitalized patients, and normal individuals. This study,

the Southeastern Conneticut (SECON) Heart Study, was designed to assess the possible precursors of MI in a group of 114 coronary patients, 114 hospitalized noncoronary patients, and 145 normal individuals. The subjects were males aged 35-64. The coronary group had survived a MI, and the noncoronary "sick" group suffered from serious illnesses such as cancer, ulcers, herniated disks, etc. In this retrospective design, the participants were interviewed in their homes for over two hours using a fixed schedule of questions, check lists, and interviewer ratings.

Wardwell and Bahnson created a Type A scale including elements from the JAS and SI, and found that the coronary group scored significantly higher on their Pattern A scale than the other two groups. This group also scored significantly higher on a scale of somatization, i.e., the tendency to translate conflict and affect into bodily symptoms. The coronary group was significantly more obese than the other groups while both the two patient groups smoked significantly more cigarettes than the normal population. The researchers concluded that an individual's defensive style, that is, the way he copes with stress, is very important. The Type A behavior pattern and the tendency to somaticize conflicts are defensive styles associated with the perception of a stressful situation as threatening. Thus the actual amount of stress a person is subjected to is not as critical to his health as his perception of the severity of the stressor and his coping style.

Another major study was conducted by Haynes, Levine, Scotch, Feinleib, and Kannel (1978). These researchers conducted the Framingham Heart Study in Massachusetts from 1965 to 1967. Men and women (N =

1822) initially free from CHD in 1949 were assessed in terms of behavioral personality type, situational stress, somatic strain, and sociocultural mobility. These researchers developed their own tests for measurement of Type A behavior and called it the Framingham Type A scale. The other psychosocial states were evaluated in terms of their relationship to the standard risk factors for CHD including age, sex, blood pressure, cholesterol, and smoking.

These men and women aged 45-77 completed a 300-item questionnaire designed to gain insights into five broad areas of psychosocial stress and strain. The researchers designed the study expecting that certain life events, social situations and behavioral types may lead to CHD, either independently or mediated through standard known risk factors. Risk factors were determined by recording each participant's systolic and diastolic blood pressure, serum cholesterol level, weight and cigarette smoking incidence.

The researchers found the Framingham Type A scale to be significantly correlated with ambitiousness (.31), emotional lability (.43), tension (.42), daily stress (.47), anger symptoms (.34), education level (.10), and with occupational status (.22).

In part II of the Framingham Study, Haynes, Feinleib, Levine, Scotch, and Kannel (1978) further analyzed the association of behavior types, and other factors with uncomplicated angina pectoris (UAP), angina pectoris with or without MI (AP), and myocardial infarction (MI). They found that among men under 65 years, Framingham Type A behavior, aging worries, daily stress and tension were associated with the

prevalence of MI. For men and women over 65 years, marital dissatisfactions or disagreements were significantly related to the prevalence of CHD. Men over 65, classified as Type A, were more than twice as likely to have prevalent angina as their Type B counterparts. More consistently in every age group, Framingham Type A women were more likely than Type B women to have AP.

Among the several measures of sociocultural mobility, none were consistently related to the prevalence of heart disease in the Framingham population. Men and women with heart disease scored significantly higher on the anxiety symptoms scale than persons without CHD. The male AP and CHD cases aged 45-64 were under significantly more daily stress than noncases.

In a multivariate analysis the significant associations were controlled for age, blood pressure, cholesterol, smoking, and other psychosocial scales. Among women under 65 years of age, Framingham Type A behavior and emotional lability remained significant discriminators of CHD prevalence. Aging worries significantly differentiated men under 65 with and without MI.

A comprehensive review of the Type A publications was conducted by Jenkins (1976). He reviewed eight prospective studies and 16 cross-sectional and retrospective studies that examined the relationship between the coronary-prone behavior pattern and some manifestation of CHD. Only one of these studies had negative results, and the remaining 21 reported positive associations between Type A and CHD. He found the Type A pattern to be associated with both angina pectoris (AP) and myocardial infarction (MI).

Jenkins and Zyzanski (1980) reviewed the history of CHD and then discussed three clusters of social psychological variables including the behavioral risk factor of Type A behavior pattern. While the discovery of standard biological risk factors for CHD (hypertension, elevated serum cholesterol, and cigarette smoking) has provided the beginnings for primary prevention programs, together these risk factors only account for about half of the etiological explanation of CHD. The authors reviewed past medical writings and ideas and concluded that personal behavior and social factors have a major influence on the function of the heart and its diseases. They reviewed the literature over the past ten years and concluded that the Type A behavior pattern is both a genuine psychological phenomena and a major risk factor for atherosclerotic diseases.

Type A and the Atherosclerotic Process

Next let us address the physiological mechanisms that play a part in the development of CHD and coronary artery disease (CAD). In CAD, fat and lipoprotein deposits line the vascular system. As these deposits increase, the diameter of the vessels decreases and the heart has to pump harder to maintain the flow of blood throughout the body. Originally, these fatty acids are released into the bloodstream to provide energy for the body during stressful emergency situations. However, the Type A individual often perceives daily situations as challenging and stressful. Therefore, large amounts of fatty acids to be converted to sugars are released into the bloodstream, but they are not used up during fight or flight. Therefore, the surplus free-

floating fatty acids glob to the vascular walls and accumulate there. Blumenthal, Williams, Kong, Schanberg, and Thompson (1978) noted that repeated sympathetic activation, in addition to fatty acid release, could play a role in promoting damage to the inner layer of the coronary arteries. That is, phasic increases of sympathetic activation associated with stress and turbulence in the vascular system could cause endothelial injury.

Glass (1977) explained in detail the physiological processes proposed to lead to CHD. The catecholaminic neurotransmitters, epinephrine and norepinephrine, increase the destructiveness of CAD through such hemodynamic effects as increased cardiac rate and blood pressure, and the elevation of blood lipids like free-floating fatty acids. The catecholamines can also accelerate the rate of development of damage to the intima (inner layer) of the coronary arteries over time and induce myocardial lesions. Epinephrine and norepinephrine are also believed to facilitate the aggregation of blood platelets and the release of platelet contents which are considered major factors in atherogenesis and in the genesis of thrombosis.

Glass presented a description of the rise and fall of catecholamines and rapid shifts between sympathetic and parasympathetic activity in the etiology of CHD and sudden death. He speculated that the Type A person experiences the alternation of active coping and giving up more frequently and intensely than Type Bs. Thus, the Type A individual experiences more cycles of hyperreactivity and hyporeactivity due to the repetitive interplay of Type A behavior and uncontrollable stress.

Glass concluded that any agent which increased circulating catecholamines may be a potential pathogen for cardiovascular function. Since epinephrine and norepinephrine are involved in autonomic nervous system discharge, it is not surprising that stress has been found to influence their concentration levels in blood and urine.

Type A behavior is thought to be associated with the manifestation of CAD, which can lead to sudden death. The role of environmental stress is also a major factor in the understanding of sudden death due to heart failure. In the following study Greene, Goldstein, and Moss (1972) obtained data on 26 patients who died suddenly in an Eastman Kodak industrial population of 44,000. The mean age of these patients dying from MI, arrhythmia, or both was 55.6 years. They found that psychological factors seemed to be important in the timing of the fatal event. At least 80% of these 26 patients had symptoms which could be described as depression. For at least 50% of the patients, psychological and social factors were associated with the time of sudden death. The frequency of this association would probably have been higher if more information had been obtained from the deceased.

These data suggest that a combination of depressive and arousal effects may cause sudden death. The hypothesis suggested by Greene et al. is that sudden death occurs in a depressed individual with physiological coronary disease risk, who for some reason experiences high arousal. On return to his baseline, ongoing, depressive state after arousal, there may be a decrement in pulse rate and blood pressure which may lead to arrhythmia or infarction, or both.

The following research to be summarized investigates the relation of Type A behavior pattern to the incidence of coronary atherosclerosis. However, instead of examining coronary vasculature at autopsy, these researchers studied the patient's vasculature in vivo by the procedure of coronary arteriography. Coronary arteriography makes possible a more precise correlation of the relationship of all risk factors, including Type A, to the degree of coronary atherosclerosis in patients studied by angiography. Coronary angiography has been shown to be the most accurate diagnostic instrument of coronary artery disease, showing high correlation with surgical and postmortem findings. However, it is still far from exact as a diagnostic procedure.

Schobinger and Ruzicka (1964) described the procedure of which only major events will be presented. A catheter is placed in the right brachial artery and positioned near the root of the aorta so that opaque material (contrast material) injected into the heart will demonstrate the pathologic process of the anatomic structures of interest. Photographs are then taken, sort of like an X-ray. Two popular methods of recording the pictures are used. The first is direct radiography by means of rapid film units. The second is cinephotofluorography, using motion picture cameras for the recording of the intensified fluoroscopic image. Usually a cardiologist or radiologist assesses the angiograms because adequate interpretation of the films requires knowledge of normal and pathologic anatomy and physiology of the heart and vasculature.

In 1976 Zyzanski, Jenkins, Ryan, Flessas, and Everist completed a study examining the relationship between psychological factors and clinical cardiovascular diseases, with particular reference to those disease processes that could be inferred from coronary angiography, ECG, and clinical evaluation. Ninety-four men, aged 26-68, referred by private internists or cardiologists to the Cardiology Service of Boston University Medical Center underwent coronary angiography. These patients manifested a variety of clinical heart diseases including angina, ECG changes, congestive heart failure and other heart disease symptoms. On the day before angiogram these men completed several self-administered tests, including the JAS, Taylor Manifest Anxiety Scale, the short depression scale by Dempsey, and the hypochondriasis and hysteria scale from the MMPI.

It was found that the 55 men with 50% or greater arterial obstruction in two or more vessels scored on the average statistically higher than the 36 men with less disease on all four scales of the JAS. The JAS scales distinguished sharply between those with greater and those with lesser atherosclerotic deposits. Zyzanski et al. felt that because similar findings emerged for both the 50% and 75% obstruction the basic finding does not depend on the particular cutting point used within this range. Secondly, they concluded that Type A behavior was not limited to the most advanced stages of the disease.

Measures of anxiety and depression, as well as the Type A behavior pattern, were found to be associated with the atherosclerotic process. The researchers concluded that high scores on the Type A pattern were

not related to reports of anginal pain or severity of congestive heart failure, but rather to the extent of atherosclerosis. The profile of high anxiety, high depression, and low denial also appeared descriptive of these patients with more severe atherosclerosis. Zyzanski et al. (1976) concluded that these results provide some evidence that certain selected behavioral measures may have specific relationships with particular processes of cardiovascular abnormalities.

In the next piece of research Jenkins, Zyzanski, Thomas, Flessas, and Tannebaum (1977) examined the relationship of psychological factors to coronary atherosclerosis. They looked at the questionnaire data, item by item, that generated the scores that Zyzanski et al. (1976) previously reported to be associated with the amount of atherosclerosis. The 94 men admitted to the Cardiology Service of Boston University Medical Center were described in the Zyzanski et al. experiment. Patients were divided into those having two or more coronary vessels with luminal narrowing of 50% or more at any point in their course ($\underline{N}$ = 58), with the comparison group being those individuals having zero or one coronary vessel obstructed to this extent ($\underline{N}$ = 37). These two groups allowed comparisons between persons with lesser versus greater atherosclerosis.

Data from the JAS and anxiety, depression, hypochondriasis, and hysteria scales revealed that men with severe atherosclerosis portrayed themselves as being insecure interpersonally and uncomfortable in social groups (Social Insecurity). Both the Type A scale and the Social Insecurity cluster were associated with more severe atherosclerosis, and both were essentially uncorrelated with each other. Among the patients

without both of these behavioral characteristics the frequency of severe atherosclerosis was 25%. The presence of either one of the characteristics raised this percentage to over 50%, and persons with both characteristics represented 91% of the cases. The modified minimum chi-square indicated that both Type A and Social Insecurity scores had an independent statistical association with atherosclerosis. The lack of any interaction effects further supported this interpretation of independent and additive main effects.

In another experiment Frank, Heller, Kornfeld, Sporn, and Weis (1978) attempted to confirm findings of a relationship between the Type A behavior pattern and coronary artery disease using angiographic ratings of severity. Subjects were 124 males and 23 females aged 29-65 scheduled to undergo coronary angiography at the Columbia-Presbyterian Medical Center. All patients were referred for angiographic study because of the presence of clinical symptoms descriptive of coronary artery disease.

Patients were typically admitted to the medical center two days before angiography. The Rosenman and Friedman SI was administered as part of an hour and a half extensive interview by the psychiatrist. After angiography, the number of major arteries judged occluded by more than 50% was used as the criterion of disease severity by the cardiologists and radiologists.

According to the WCGS already discussed, the distribution of Type A and B behavior pattern in the general population was A1, 10%; A2, 40%; B3, 40%; and B4, 10%. However, in the Frank et al. study the patients

with suspected coronary atherosclerosis showed a greater representation of Type A: A1, 51%; A2, 22%; B3, 20%; and B4, 5%.

Statistical procedures including multiple regression correlational analysis were performed. The patients with the Type A personality had more serious coronary atherosclerosis than persons lacking these traits. The Type B patients frequently had no significant disease at all. The physical risk factors of hypertension, cholesterol, smoking, sex, and age were significantly correlated with the number of arteries stenosed by 50% or more. A history of previous MI was also significantly correlated with disease severity. Frank et al. demonstrated that the association of the Type A behavior pattern with coronary artery disease also existed after statistical adjustment had been made for the effect of the following five major risk factors: cholesterol, smoking, hypertension, age, and sex.

The association between behavior pattern Type A and the coronary atherosclerotic process as demonstrated by coronary arteriography was examined by Blumenthal et al. (1978). Participants were 80 male and 62 female patients, aged 15-69, referred for diagnostic arteriography at Duke University Medical Center. Before the catheterization procedure the subjects were evaluated as to personality type by the SI. Each patient also completed a battery of psychological tests including the JAS designed to measure the Type A pattern.

The researchers invented a Total Coronary Index (TOTCI) to assess the severity of atherosclerosis, computed by summing the scores of the

rating of the four vessels. Three groups were formed according to the severity of atherosclerosis: mild, N = 78; moderate, N = 36; and severe, N = 28. This enabled study of various risk factors in patients grouped according to severity of arteriographically documented anatomic involvement.

Blumenthal et al. found that the Type A behavior pattern was significantly related to arteriographically documented atherosclerosis. While 44% of those patients with mild coronary occlusions were classified as Type A, 69% of the moderate group and 93% of the severe occlusion group were Type A. The patient classification as determined by the SI strongly related to the angiographically documented levels of coronary atherosclerosis. However the behavior pattern as determined by the JAS bore no relation to the TOTCI.

In addition to the behavior pattern, the investigators found many of the traditional risk factors for CHD to be related to the arteriographic indices of coronary atherosclerosis. They concluded that sex must be considered a major risk factor since the incidence of CHD in middle-aged men was roughly five times that of middle-aged women. Men had significantly greater arteriographically demonstrated coronary atherosclerosis than women. Serum cholesterol was also found to bear a significant association to the severity of coronary disease even when age and sex were covaried. When present or past cigarette smoking were considered together, as compared to those who had never smoked cigarettes, smokers were found in significantly greater proportions in the group with moderate (74%) to severe (50%) coronary occlusions than

in the mild (42%) group. Note that this research provided the first evidence that behavior pattern is related to the atherosclerotic process among women as well as men.

Blumenthal and Williams (1979) examined a new sample of 307 men and 117 women who were referred to Duke Medical Center for coronary angiography because of suspected coronary artery disease. They found that 71% of the 319 patients classified as Type A by the SI had significant coronary atherosclerosis. In turn, only 56% of the 105 Type Bs had significant disease. The relationship between Type A and the extent of coronary artery disease (CAD) was at least as strong for the women as the the men.

Turning to studies with contradictory results, Dimsdale and associates published three studies of the association between Type A behavior pattern and severity of atherosclerosis. In the first study, Dimsdale, Hackett, Hutter, Block, and Catanzano (1978) tested the hypothesis that Type A personality was associated with an increased extent of coronary artery disease. They replicated the Zyzanski et al. study in design and in characteristics of the population studied. Ninety-nine men and 10 women between the ages of 18 and 70 were selected as they awaited cardiac catheterization at the Massachusetts General Hospital. All of these patients showed clinical evidence of coronary artery disease or chest pain. The patients were seen before cardiac catherization and completed the JAS as part of a larger risk factor inventory. A coronary vessel was considered significantly narrowed if angiography revealed 50% or greater narrowing of the vessel's diameter.

Surprisingly, the investigators found no evidence for a significant association nor even a trend toward a positive association between Type A behavior and number of diseased vessels. Dimsdale et al. were unable to confirm the findings of Zyzanski et al. even though the populations in both studies were quite similar.

Dimsdale, Hackett, Hutter, Block, Catanzano, and White (1979) decided to reexamine the association between Type A and coronary artery disease. They studied 105 male patients between the ages of 18 and 70 undergoing cardiac catheterization because of suspected coronary artery disease. These patients completed the JAS and were interviewed using the SI. For this study as in the other studies analyzing interview data with angiographic results, the interviews were classified as A (including A1 and A2), or not A (including X and B). Again, the researchers found no significant relationship between the extent of coronary artery disease and the JAS or the SI.

In a third study Dimsdale, Hackett, Catanzano, and White (1979) at Massachusetts General Hospital examined 193 men with coronary artery disease free from significant valvular heart disease. All patients were seen prior to coronary angiography and were classified as to behavior pattern by both the JAS and SI. Coronary angiography was performed and interpreted by cardiologists unaware of the patient's behavior pattern classification.

Dimsdale et al. hypothesized that if there was a substantial misclassification of individuals as to behavior pattern Type A then there would be poor agreement between the JAS and SI. Their second

approach to the possibility that misclassification might be masking an association between Type A and vessel disease was to use increasingly stringent classification criteria for personality type. The researchers considered the interview scores to be the true scores with the JAS scores being tested against them. The agreement characteristics of both the Type A measurements were studied after eliminating the middle ground JAS scores and the intermediate classes in the interview.

The JAS was found to be significantly associated with the SI and agreement between the two methods ranged from 72% for the whole sample to 84% when the intermediate personality types judged by the SI and the middle standard deviation of the JAS were excluded. Again, both interview analysis and JAS classification were consistent in that neither measure was associated with the extent of vessel disease. Even when the researchers examined those cases where the JAS and interview were congruent in the personality typing, no significant association with extent of vessel disease was found. The authors concluded that the differences in their findings from other studies may be attributable to subtle differences in the population characteristics of each sample studied.

The last study to be reviewed was conducted by Silver, Jenkins, Ryan, and Melidossian (1980). They examined the psychological correlates of coronary angiographic findings in 78 men and 105 women. The participants underwent coronary angiography at Boston University Medical Center as part of their cardiological evaluation. This was the same male population studied by Zyzanski et al. The female sample age ranged

from 25 to 68 years. Both sexes completed two self-administered questionnaires the day before undergoing angiography. These were the JAS and a 108-item true and false questionnaire, largely derived from the MMPI. Some of the women who had never been employed did not complete the JAS due to the number of job related items on the questionnaire. The four component scales of the JAS were also assessed.

Striking male and female differences were observed. There were almost three times as many male patients with coronary artery disease as there were females with disease. There were more than twice as many female patients with valvular and other related cardiovascular illnesses as there were males. Males had significantly more vessel disease and significantly greater proportion of men had histories of MI (77%), than was the case for women (23%).

In addition, male patients were significantly more Type A and more hard-driving than the female patients. There were significant sex differences seen for anxiety and depression as the women were more depressed and anxious. For Type A and its component factors, there were significant differences between male and female patients. Men were more Type A, more hurried and impatient and more job involved. Sex differences were greater in coronary artery disease patients than in those having other diagnoses. Among CAD patients, men scored significantly higher than women on Type A behavior and its factors.

The studies previously reviewed by Zyzanski, Frank, Blumenthal, and Silver can be regarded as provisional demonstrations of a pathophysiological link between Type A personality and the occurrence of heart

disease. However, the Dimsdale attempts to replicate Zyzanski failed to show any significant relationship between Type A behavior pattern and the severity of atherosclerosis. Dimsdale, Hackett, Catanzano and White (1979) noted that one reason for the discrepancies in conclusions by the various research teams could be the use of different methodologies for exploring coronary artery disease. For one thing, artery disease was defined in different ways. Some studies defined vessel disease as more than 50% occlusion and others defined vessel disease as more than 75% occlusion. Blumenthal et al. derived a total coronary index that weighted vessel disease according to the amount of occlusion present. Other studies also counted the number of vessels significantly occluded.

Also, the patient population differed between the studies reviewed. Some studies included both men and women while others only used male subjects. Some studies excluded patients with valve related heart disease while other studies did not. And finally, in measuring the Type A behavior pattern some studies employed either the JAS, SI, or both. It appears that at this time the question as to whether or not Type A behavior pattern is associated with coronary artery disease as evidenced by angiographic findings is still unanswered. There is a possible way to explain the contradictory conclusions. The data in all of these studies are retrospective. Thus one cannot exclude the possibility that symptomatic heart disease may have modified the life-long Type A behavior by the time the patient arrived for coronary arteriography.

Behavioral Correlates of Type A

Many researchers have noted the association of Type A behavior with other social and psychological variables. Occupational status, life dissatisfactions, stress factors, and achievement motivation are examples of such variables. In addition, Glass has conducted numerous experiments examining the response style of Type A individuals to situations evoking fatigue, impatience, and hostility. The following four studies compare heart patients with normal individuals in order to observe differences between these two groups in terms of life stresses, significant life changes, psychosocial factors, and job satisfaction. While these MI patients have not been classified as either Type A or Type B, they seem to exhibit traits similar to the coronary-prone behavior pattern. In these studies the data on the MI patient groups are relevant in terms of understanding probable behavioral correlates of the Type A behavior pattern.

Thiel, Parker, and Bruce (1973) examined the longstanding stress patterns in men suffering their first MI. Fifty patients, aged 40-60 admitted to the hospital following a recent MI were compared to 50 age-matched, healthy control subjects seen for routine physical examinations. All of the participants were interviewed extensively by Thiel using a standardized questionnaire covering various habits, lifestyle, socioeconomic factors, and emotional factors. The clinical variables examined included electrocardiogram, relative body weight, blood pressure, serum lipids, and other blood studies.

Thiel et al. found that habits, life style, personal behavior, patterns of life stress, and their duration were closely connected with the onset of MI in men. The results indicated that divorce was significantly more frequent in the MI group. A feeling of loneliness also occurred more frequently in the patients with MI. One of every four of the patients with MI worked more than 70 hours weekly. Sleep disturbances and dyspnea were significantly more frequent in the MI group. Feelings of nervous stress, anxiety, and depression were significantly more pronounced in the CHD group. Excessive drive and excessively rapid body movements were significantly more prominent in the MI group.

The data showed clearly that the healthy men as a group were moderate smokers while the infarction patients showed many individuals with extreme smoking habits. The tendency to extremes was also noted in exercise: infarction patients either had no sports activity at all or they were extremely overactive. However, inactivity was much more common.

A definite difference was observed between the age groups 40-50 and 51-60 in that most of the extreme life stress patterns were found in the younger patient groups. Well known risk factors such as glucose metabolism disorders, cigarette smoking, lack of exercise, and personal behavior pattern were significantly different between the MI group and the control group. In this study obesity, hypertension, hyperlipidemia and family history were not important in separating the two groups.

In the next study Theorell, Lind, and Flodérus (1975) focused on psychosocial events including the previous life-change items for over 6000 male trade union workers in Stockholm. The men were followed for a 12-15 month period with regard to death from all causes and hospitalization for MI. The men indicated life-changes that had taken place during the last twelve months. Answers to psychological questions regarding work, family and personal factors were obtained. Information about education, income, marital status and occupation were recorded.

Theorell et al. found that the life-change measurement technique did not predict near-future MI. A preformed discord index made up of self-rated Type A behavior and dissatisfaction variables predicted a significant number of near-future MIs. Increased responsibility at work predicted significantly about 10% of near future MIs. Elevated life-change measures for the last year indicated increased risk of near-future neurosis onset. Several questions about irritability and dissatisfaction, such as hostility when slowed down and dissatisfaction with home life, predicted several kinds of illnesses.

The association between CHD severity and psychosocial factors was the subject of a study by Liljefors and Rahe (1970). They examined 47 pairs of Swedish identical male twins and 38 pairs of fraternal twins for differences in psychosocial patterns. Variance due to differences in genetic make-up could be controlled by using the monozygotic twins. These twins were found through the Swedish Twin Registry after which they agreed to undergo a complete medical examination and psychosocial interview. CHD diagnosis was based on previous hospital records,

physical examination and electrocardiogram during rest and exercise. Lab tests, height, weight, and blood pressure were obtained. An hour long social history pertaining to the subject's work patterns, leisure time, home problems and life satisfactions was administered.

Of the total 47 monozygotic twins, 32 pairs showed differences in their signs and symptoms of CHD. The researchers were mainly interested in the differences between each twin pair on the various psychosocial scores. They hypothesized that the twin with the most severe manifestation of CHD would report more devotion to work, lack of leisure time, more home problems and more dissatisfactions with work. Liljefors and Rahe found that the severity of CHD was positively related to the subject's total psychosocial score. This relationship was strongest for subjects with the most severe CHD rating, which was previous MI. The relatively high total psychosocial scores of subjects with previous infarction distinguished this group from their twin brothers with angina pectoris or no CHD. When genetic differences were controlled, the men's psychosocial categories proved to have a consistent and, at times, significant correlation with their degree of CHD.

Looking at the devotion to work category, the men with previous infarction were found to work far more than the standard number of hours and frequently assumed much responsibility on the job. They occasionally worked on weekends and throughout their vacations, and usually took only half an hour for lunch. These men could be described as "work addicts."

In the lack of leisure time category, men with minimal or no CHD showed the best ability to relax during their time away from work. They took more leisurely breaks during the work day, rarely worked overtime, and when at home, primarily read or watched TV. They did not participate in many clubs or organizations, and they always took their vacations. The longer a subject stayed at the office working, the fewer hours of the day he had remaining for leisure time.

The men with more severe CHD indicated a greater number of home problems, such as economic strife, although marital discord, separations and divorce were rare. The men with relatively severe CHD often reported their greatest life dissatisfactions in the area of their education. They felt they were not prepared for their present work position and needed to have received more years of education. These men also reported poor childhood and adult interpersonal relationships. They felt they had too low of an income, and regretted their past and/or current working conditions. Liljefors and Rahe found that the psychosocial histories of subjects with previous infarction were more similar to one another than they were to those of their own twin brothers.

Sales and House (1971) conducted three separate studies to examine the relationship between CHD and job dissatisfaction. They felt that particular forms of social stress may contribute to risk of CHD. In each of the studies a different set of subjects and different methods were employed. Various occupational groups were examined for whom mortality rates due to CHD and average levels of job satisfaction were

known. The first study involved data on 16 different occupational groups (N = 7000). In this study social status was not related to coronary disease mortality. The data indicated a strong significant relationship between job satisfaction and coronary disease. High levels of job satisfaction were associated with low rates of death from coronary disease.

Study II involved probability samples of lawyers and university professors in the Detroit area during the 1950's. Sixty-eight professors and 207 lawyers were surveyed. In this study questions involving different aspects of job satisfaction were used. No particular relationship between social status and coronary disease was found. A significant negative correlation was observed between the groups' total job satisfaction (as measured by the answer to "Do you ever think of changing to another job?") and their rates of CHD.

For Study III a national cross-section of working men including 127 managers or proprietors, 55 sales workers, and 46 clerical employees served as subjects. Similar to Studies I and II, no significant relationship between social status and coronary disease was found. Large negative and significant correlations were observed for the white-collar groups between coronary disease and total job satisfaction. The results from the white-collar groups replicate the data reported in Studies I and II. That is, high levels of job satisfaction were associated with low rates of death from coronary disease.

Two review articles summarize the findings relating CHD to major behavioral variables. Jenkins (1971) reviewed the major journal

articles addressing psychologic and social precursors of CHD published between 1965-1969. He grouped the studies under eight main headings: sociologic indexes, social mobility and status incongruity, anxiety and neuroticism, life dissatisfactions, stress, coronary-prone behavior pattern, and other personality traits. Jenkins defined the sociologic indexes as social class, religion, occupation, education, income, marital status, national descent and population density. He concluded from his review of the relevant studies that, considered singly, social status indexes do not have a regular relation to coronary disease. He suggested that researchers should hypothesize which kind of situation might raise the risk of coronary disease and then define combinations of social and demographic variables.

He defined social mobility as a geographic move, change in occupational category, or a move to a different social status. Status incongruity was defined as having different characteristics which simultaneously place a person at different levels of the social hierarchy. He concluded from his review that there was mixed evidence for a relationship to CHD. He found a positive relation for geographic mobility and for changes between parental generation and the generation under study.

In many of the studies relating anxiety and neuroticism to CHD, scales from the MMPI and 16 PF were employed to measure these traits. Jenkins found that neuroticism and anxiety appear to precede coronary disease, particularly angina pectoris.

Life dissatisfactions were defined as the inability to receive satisfactions from social and leisure activities and job activities. Also included were other kinds of life frustrations. Stress factors included object loss (death) and work overload. Jenkins concluded from his review that life dissatisfactions and environmental stress were more prevalent in patients with CHD. However, most of these studies were retrospective. He suggested that a prospective study of family conflict, work-dissatisfactions, deeply felt losses and job overload needs to be conducted. Jenkins concluded that social and psychological factors cannot be ignored in future epidemiologic studies of coronary disease. Further, in future psychologic and social studies, angina pectoris, myocardial infarction, silent myocardial infarction, and sudden death should be treated as separate categories.

In his next comprehensive survey, Jenkins (1976) reviewed empirical studies published from 1970 through 1975 that related psychologic and social variables to atherosclerosis and coronary disease. A major conclusion from this review was that occupation and its associated way of life contribute to coronary risk above and beyond the physical labor involved in the job itself. He found that demographic indicators, such as occupational and marital status, showed inconsistent relations with coronary risk. While past research suggested that coronary disease is related to social mobility (either between generations or mobility within the lifetime of the person at risk), new evidence has clouded the issue of its possible relation to coronary disease. The research was also undecided as to whether status incongruity (possessing

simultaneously the identifying markings of different social classes) had an influence on CHD incidence.

Jenkins found that coronary disease is associated with a variety of expressions of anxiety, depression, psychophysiological complaints, general nervousness, and patient reports of such symptoms as sleep disturbance, fatigue, and emotional drain. He found inconclusive evidence concerning whether or not stress and life changes might raise the risk of illness by depleting a person's available "adaptive energy" or whether the mechanism might be the reactions of alarm and distress caused by certain life changes.

Aspects of the Type A behavior pattern and its relation to the modern occupational career is the focus of the next four studies. Individuals classified as Type A are noted for their work addiction and heightened job responsibility. The studies assess attitudes toward activity and work, and also incidence rates for CHD. Mettlin (1976) examined the correlation between Type A behavior pattern in 912 employed men and 15 measures of social and social-psychological status. The men completed the JAS and a questionnaire pertaining to (1) demographic and socioeconomic status, (2) status attainment at place of work, (3) work related interpersonal influences, and (4) status change and mobility. The survey was based on the responses of 218 university faculty, 142 health officials, 198 utility company employees, 89 union officers, and 296 bank officers.

Mettlin found that six variables (Education, Occupational Prestige, Expected Rank, Employer Expectations, Rank Change and Rank Attainment

Rate) were significantly associated with all three factors of the JAS. All of the remaining nine variables were related to at least one JAS factor. The finding that these structural and interpersonal variables are associated with the coronary-prone behavior pattern leads to the conclusion that Type A behavior pattern is embedded in the social context of the modern occupational career. Not surprisingly, Type A is related to rapid career achievement and career mobility.

Addressing the interpersonal dimension of the questionnaire, when a respondent perceived his employer as having high expectations for the quality and quantity of his work, and the employee's competitiveness on the job, greater levels of Type A behavior were observed. Therefore, the expectations of employers may play a significant part in inducing the Type A behavior pattern in their employees. Mettlin concluded that the coronary-prone behavior pattern is associated with stable social structures and social values which will probably conflict with preventive intervention. That is, asking employers to be less demanding and asking employees not to strive for rewarding advancements is not going to work, even though the health benefits are emphasized.

In a longitudinal study examining CHD incidence, Kittel, Kornitzer, and Dramaix (1980) followed two cohorts of Belgian bank clerks during 5 and 10 year examinations. The work conditions of the two cohorts were different. In cohort I the subjects were active in a private bank where management changes created a competitive atmosphere for important jobs. In cohort II, subjects were employed in a semipublic savings bank where work was regular and monotonous, there was little struggle for promotion

and less responsibility was required. At intake, 447 males aged 40-59 were free of CHD in cohort I, and 768 males free of CHD formed cohort II.

At both the 5 and 10 year follow-ups significant differences in CHD were found. The incidence of new CHD was significantly higher for cohort I than for cohort II. A 40% higher total mortality rate in cohort I was completely accounted for by the incidence of fatal MI or sudden death. The means at intake for systolic blood pressure and diastolic blood pressure were significantly higher for cohort I than cohort II. Diastolic blood pressure differences remained significant at the 10 year follow-up. Because differences in the coronary risk profile of each cohort could not explain these differences, the researchers decided to retrospectively examine job stress for each of the cohorts. The means of the Job Stress Scores in cohort I were significantly higher than in cohort II. The means between executives and clerks were significantly different in cohort I, but not in cohort II. The researchers suggested that the differences in incidence rates for CHD can be explained by the differences between the two cohorts in psychological traits and psychosocial variables. Although no measures of Type A behavior were obtained, Kittel et al. recalled that the subjects from the two cohorts presented themselves at the medical examination in different ways. Cohort I subjects were in a hurry and were worried, as their daily schedule was tight. In comparison, subjects in cohort II seemed more relaxed. As previously explained, the functions of the employee at each bank were quite different, one being fast-paced and competitive, the other relaxed and predictible.

The next study looked more closely at attitudes toward work, comparing MI patients and normal individuals. Van Dijl (1974) administered a 69-item Rating of Statements List to over 1,300 men working in Dutch factories and offices. These data were factor analyzed and six interpretable factors emerged including the following two factors. Factor III had to do with attitudes toward activity and work. Factor IV had to do with attitudes toward job responsibility and job involvement.

Van Dijl hypothesized that when compared to two control groups (each $\underline{N}$ = 102), myocardial infarction patients ($\underline{N}$ = 102) appeared more work addicted with heightened job responsibility. In fact, the results from the Rating of Statements Lists indicated that the MI patients showed a significantly more positive attitude toward activity, work, and job responsibility when compared with both control groups.

Along the same line of investigation Van Dijl (1978) focused on three factors derived from the Rating of Statements List to explore the differences between men classified as Type A or B by Rosenman and Friedman's Structured Interview. The factors examined in this study of Swedish workers were attitudes towards aggressivity, activity and work, and ambition/dominance. Van Dijl hypothesized that the Type A men characteristically described as hard driving, competitive, conscientious, impatient, aggressive, and striving for vocational and social achievement would score differently than Type B men on these three derived factors.

Eighty-seven men filled out the Rating of Statements List, 36 of whom had been classified as A and 29 as B. As expected the researcher found that the Type As showed more aggression, more aggressivity for activity and work, and more ambition/dominance on the three factors than the men classified as Type B. From the WCGS finding that Type A behavior pattern is correlated with an increased chance to develop CHD in the future, Van Dijl argued that these three factors may also be important in the prediction of CHD.

Achievement striving is also a relevant behavior associated with the coronary-prone behavior pattern. The next several studies address various aspects of achievement motivation and personality factors including the Type A behavior pattern. Burnam, Pennebaker, and Glass (1975) conducted a study to examine Type A behavior and its relationship to a sense of time urgency and excessive achievement strivings. The authors explained that the maintenance of control over many aspects of the environment is very important to Type A individuals, and they accelerate the pace at which they live in order to achieve this mastery. The experiment took place in two parts. A total of 62 students, half As and half Bs, were asked to read a technical article out loud with instructions to stop at one minute. The impatient Type As were expected to experience the passage of time as shorter than it really was. During the next portion of the experiment, half of the As and Bs were told that they had 5 minutes to work on simple arithmetic problems (deadline condition) while the other subjects were not given a stated time limit (no-deadline condition). All subjects were allowed 5 minutes to work

the problems with the expectation that Type As would work at maximum capacity in both conditions. Type Bs were expected to complete more math problems in the deadline condition than in the no-deadline condition.

The results indicated that the As signaled the passage of one minute at 52.6 sec while the Bs signaled at 75.0 sec. These means were significantly different from each other and from the actual 60 sec time span. In the math performance, both As and Bs made the same number of errors. As expected, As attempted significantly more problems than Bs under the no-deadline condition. The difference between As and Bs in the deadline condition was not significant. Burnam et al. concluded that the excessive drive of the Type A individual produces high levels of effort even when the task demands are not explicit. In contrast, Type Bs respond to the perceived requirements of the situation.

The next piece of research utilized 10 year old protocols derived from a projective test and related the findings to coronary disease. Bonami and Rimé (cited by Jenkins, 1976) conducted a prospective analysis on responses to the Van Lennep Four-Picture Test. These responses were drawn from the personnel files of a large corporation. These projective tests were administered an average of 9.7 years before the emergence of clinical coronary disease in 32 male subjects. Forty other carefully matched controls who also completed the test ten years ago served as the comparison group. The 32 men who later developed coronary disease showed a greater need for achievement and a greater concentration on their socioprofessional setting at the expense of attention to their family and to recreation.

Matthews and Saal (1978) looked at the relationship between Type A behavior, job involvement, and a series of motivational constructs including achievement, power and affiliation motives. These constructs were thought to bear a descriptive resemblance to the Type A behavior pattern. The participants were 94 male undergraduates at Kansas State University. Each subject wrote stories to each of four stimulus cards from the Thematic Apperception Test (TAT). The TAT protocols were scored for achievement, affiliation, and power motivation. Achievement motivation was conceptualized as a combination of need for achievement and need to avoid failure. Therefore, a standard paper and pencil test of fear of failure was also included. Type A behavior was assessed by the JAS and the SI. Job involvement was also assessed.

Matthews and Saal found that Type A is not related to achievement, power and affiliation motives. Turning to the job involvement level, the group "high" in job involvement yielded significantly higher scores on three of the JAS scores including Speed and Impatience, Hard-Driving and Competitive, and the A-B dimension. The researchers examined the different combinations of achievement motivation and test anxiety. These data indicated that the individuals high on achievement motivation and low on test anxiety had the highest Type A scores on the JAS. Because of the greater importance of work to Type As, they may work harder than Type Bs in either school or job situations and reap the benefits of these efforts. The researchers concluded that Type A behavior pattern is multidimensional in nature and is not strongly related to individual constructs.

Matthews, Helmreich, Beane, and Lucker (1980) conducted a study to answer the question, "Does Type A behavior help or hinder the merit of one's work?" The researchers looked at the meritorious scientific work of 118 male members of the Society of Experimental Social Psychology. The measure of merit was the number of citations by others to an individual's published work over a 3 year period. The productivity measure was the mean number of publications during the 3 year period. The researchers also investigated the relationship between Type A and need for achievement. Each of the subjects had returned a packet that contained biographical data, the JAS, and the Work and Family Orientation Scale (WOFO). The WOFO contained 23 items scored to yield three motivational scores: Mastery, Work, and Competitiveness.

The researchers found that Type A is positively associated with Mastery, Work, and Competitiveness scores. Thus the more Type A the individual the more likely he is to prefer challenging tasks, to like work, and to be competitive in orientation. Looking at indices of merit, the Type A scores showed positive relationships with the citation and productivity indices. Those who scored high on the Hard-Driving competitiveness factor of the JAS tended to be cited more often by others and to be productive during the 3 year span. Also, men who had higher Type A, Hard-Driving and Speed-Impatience factors of the JAS were cited more often than those who were cited less often. Matthews et al. concluded that Type A is related to superior scientific research and not only to the volume of work in this sample of men.

The effort to achieve may be related to attentional style. Some researchers observe that the attentional style of Type As and Bs are measurably different. Matthews and Brunson (1979) conducted three studies comparing Type A and B college students on attentional style. In the first experiment As and Bs worked on two tasks at the same time. The researchers hypothesized that Type A individuals would focus their attention on the main aspect of the environment and attend less to the peripheral aspects than Type Bs. Focusing of attention occurs when performance on the secondary task is poor and performance on the central task is the same or good. In the first experiment Types A and B undergraduates worked for 6½ minutes on two tasks simultaneously. As predicted, the As, relative to the Bs, performed significantly more poorly on the secondary task and significantly better on the primary task. It appears that because of the Type A persons' chronic efforts to achieve, they devote their full attention to the tasks at hand.

In the second experiment, Matthews and Brunson hypothesized that if Type As attend less to task-irrelevant peripheral events than Bs do simply because they are attending to a central task, then the primary task should not be affected by the presence or absence of a distractor. However, if Type As actively inhibit their attention to distractors, the performance of As should be improved by the presence of a distractor. To look at these two possibilities, Type A and B undergraduates performed a task either in the presence or in the absence of a tape of distracting sounds. The data indicate that As performed better with a distractor than without, probably because As actively inhibit their attention to the distractor. There were no differences in the

performance of As and Bs without a distractor. Unexpectedly, Type B performance tended to deteriorate with distraction.

The researchers conducted their third experiment to replicate the method in the second experiment. As in the second experiment, Type As performed better with a distractor than without. In contrast to the results of the second experiment, Bs did not deteriorate in their performance in the presence of a distractor. The experimenters concluded that Type As can actively inhibit their attention to peripheral events that might distract them from performing well on a task. In everyday life, they may not notice peripheral events that are not immediately relevant to task performance, such as their own physical symptoms or subtle cues of another's distress.

Glass and other researchers have created experimental situations to investigate the presence of fatigue, sense of time urgency, and hostility in Type A and B individuals. Carver, Coleman, and Glass (1976) speculated that Type As might suppress feelings of fatigue to a greater extent than Type Bs in order to persist at a tiring but challenging task and thus achieve success in its mastery. In this experiment subjects were required to walk on a motorized treadmill at steeper angles of incline. The subjects were assessed for their maximum capacity beforehand. The researchers found that the Type As were more persistent than the Type Bs. The Type As reached an oxygen absorption rate equal to 91.4% of their maximum capacities, whereas the Bs reached only 82.8% of their capacities. Also, the Type As rated their fatigue as significantly lower.

Glass, Snyder, and Hollis (1974) conducted two experiments to examine behavioral consequences of a sense of time urgency, which characterizes individuals manifesting Type A behavior pattern. In the first experiment, 15 A and 16 B male students were tested for 45 minutes on a task where a slow and patient rate of responding was necessary to receive reinforcement. During the testing session, the experimenter recorded a variety of behaviors indicative of tension and general hyperactivity. The researchers found that the Type As performed more poorly than the Type Bs because they were unable to wait a long enough period after reinforcement. The As rated this task as significantly more difficult to perform than the Bs. Tense and hyperactive behavioral signs were shown by 47% of the As and only 12% of the Bs.

The second experiment extended these results into the interpersonal situation. In this experiment 40 male students classified by the JAS as either Type A or B engaged in a discussion with a confederate in order to reach concensus on several problems. The confederate deliberately slowed down the discussion for half of the subjects, and allowed the discussion to proceed at a normal pace for the other subjects. Behavioral signs of impatience and irritability were recorded for all subjects. The differences between Type A and B students in the slow-down condition were not significant, but the means were in the expected direction. The students who scored high on the Speed-and-Impatience factor score of the JAS showed a greater increase in impatience and irritation in the slow-down treatment than low scoring subjects. Glass et al. concluded that these two examples provide some

support for the importance of time-urgency in the Type A coronary-prone behavior pattern.

Glass (1977) addressed the hostile and aggressive component of Type A behavior. He conducted an experiment to test the idea that compared to Bs, As would react with more aggressiveness toward another person who made fun of their efforts to perform a difficult task. The subjects were then given the opportunity to administer shocks to the harassing individual. Control As and Bs participated in only the shock phase of the experiment. The As who were denigrated were observed to administer higher levels of shock than the As in the shock phase only. The two groups of Bs did not differ significantly from each other. The results suggested that the Type A persons are not uniformly more aggressive than Bs, but they become so in response to a specific set of arousing circumstances.

Glass described Pattern A as emerging in the presence of a specific set of eliciting conditions, namely, perceived threats to environmental control. Thus, Type A is a strategy for coping with uncontrollable stress. After prolonged exposure to uncontrollable stress, the Type A's efforts at control decreases. The Type A individual exhibits this helplessness only under conditions of high salience. In an investigation of Type A response style to stressful situations, subjects were briefly exposed to an escapable or inescapable stressor. Twelve inescapable noise bursts served to threaten the subject's feeling of control. The Type As were expected to react to this threat with increased motivation to master the next task in order to reestablish

their sense of control. After the pretreatment phase, subjects were then tested on a psychomotor task in the nonstressful phase of the study. Glass found that pretreatment with an inescapable stressor increased the performance of As and depressed the performance of Bs. He suggested that As react to stressors that threaten their feelings of control with enhanced efforts to assert and maintain control.

Glass noted that As are over responsive only when the uncontrollable stimulus is prominent, for example, a loud rather than soft noise. Under conditions of high salience, Type As exhibit greater efforts at control than do Type Bs. When the cues are low in salience, Type As show depressed control efforts compared to Type Bs.

In conclusion, the research area investigating Type A behavior and its association with other social and psychological variables at times yields mixed evidence. Some of the studies compare MI patients to a healthy population in order to observe differences in life stresses, significant life changes, psychosocial factors and job satisfaction. In these studies, the MI patients exhibit characteristics that strongly resemble the Type A behavior pattern. Looking at social status factors, each separate index (occupation, marital status, social class) does not have a regular relation to coronary disease.

The coronary-prone individuals are noted for their devotion to work. They are likely to work long hours, are quite ambitious, and report recent career mobility. They value increased job activity and enhanced job responsibility. They are often described as work addicts. These individuals exhibit a high need for achievement, are competitive

in orientation, and strive for career achievement. Type As persist longer at a task than Type Bs and work closer to maximum capacity than Bs. They exhibit high levels of effort and excessive drive.

The MI patients and Type A individuals are likely to report more life dissatisfactions and stress factors. They define home life and economic strife as problematic. Sometimes they are dissatisfied with their position at work. Common expressions of anxiety include depression, nervousness, and sleep disturbance. Type A behavior has been described as a coping effort to assert and maintain control over situations perceived as threatening. Compared to Type Bs, Type As become more aggressive in response to certain arousing circumstances. They are easily irritated when slowed down, and perceive the passage of time as faster than it really is. Hostility, anger, and frustration are easily evoked from Type A individuals.

Type A Behavior Pattern in Women

Most of the early research examining the coronary-prone behavior pattern has focused on the white, employed, male population. Recently, studies have begun to explore the prevalence of Type A behavior in women and have included women in their studies which relate Type A to the incidence of CHD. In the first two examples of research to be presented, MI patients are compared to either normal populations or to other non-CHD "sick" populations. Recall from the previous section that MI patients often exhibit traits that resemble the coronary-prone behavior pattern. These two studies examine differences between the

heart patient group and comparison group in terms of stress factors, personality traits, and components of the Type A behavior pattern.

A standard technique to assess Type A behavior was not employed in the following study, but it is important because both normal women and women with clinical heart disease were examined. In Sweden, Bengtsson, Hallstrom, and Tibblin (1973) conducted a study to examine social factors, stress experiences, and personality traits in women with ischaemic heart disease and women representative of the general population. The women's ages ranged from 50-54. The reference group for social factors and subjective stress experience consisted of 578 women. Out of the reference group, 68 women were assessed for various personality traits. The clinical group included 29 women with angina pectoris (AP), 23 with EEG changes ("coronary EEG"), and 42 survivors of myocardial infarction (MI).

The researchers found comparatively few unmarried women in the various heart disease groups. That is, MI and AP tended to be more common in married than in unmarried women. Significantly more women in the MI group and "coronary EEG" group had four or more children. The researchers speculated that a high incidence of ischaemeic heart disease in women with many children may be an effect of a large number of pregnancies, or perhaps the stress of managing many children. The socioeconomic status was lower in the women with ischaemic heart disease and there were fewer wage earners than in the reference group. Bengtsson et al. suggested that the lower incomes of the women with ischaemic heart disease may be explained by preexisting heart disease

which may have influenced them to stop working. The number of stressors tended to be larger in both married and unmarried women with MI than in the reference sample. The women with MI and AP reported significantly more psychological stress than the reference group. Incidence of "severe stress" was reported by 31% of the MI group, and 21% of the AP group compared to 7% of the reference group.

Of particular interest was the personality trait assessment utilizing Cesarec-Marke's Personality Schedule, a personality test similar to Edwards Personal Preference Schedule (EPPS). Both of these tests are based upon Murray's theory of personality. The main purpose of assessing personality traits was to test the hypothesis that Type A behavior pattern was over-represented in women with MI. The two personality traits considered to measure this behavioral pattern, aggression and achievement, tended to score higher in the MI group than the reference group. The difference was significant for aggression but not for achievement. The researchers also found that neurotic self-assertiveness was clearly more prominent in the MI group than the reference group.

In another study, patients hospitalized for serious illnesses were compared to heart patients to control for the seriousness of being in the hospital and possible lifestyle changes due to being very sick. Kenigsberg, Zyzanski, Jenkins, Wardwell and Licardello (1974) studied a sample of 48 hospitalized patients with coronary disease and 42 patients hospitalized for surgery or for traumatic injury (free of CHD). All patients were inpatients at Bridgeport Hospital in Connecticut,

including both men and women between the ages of 22-64. These two groups were compared on specific behavioral variables; the Jenkins Activity Survey (to determine behavior pattern) was supplemented by brief questions pertaining to certain social characteristics. This study group also provided an opportunity for cross-validation of earlier findings relating specific JAS scales to CHD. The scales of the JAS include the global Type A assessment, Speed and Impatience, Job Involvement, and Hard-Driving factors.

As predicted, the CHD cases exhibited more Type A behavior and were more hard-driving. While there was a trend for cases to respond with more speed and impatience, this factor of the JAS did not show a statistically significant difference. Low mean job involvement scores for CHD and other hospitalized patients groups support the contention that during a serious illness, persons are likely to be less committed to the pursuit of their vocations. Another important aspect of these results is the absence of meaningful differences between men and women on the JAS for this sample. Twenty-three percent of the sample were women and women with CHD scored higher than women controls on both the Type A and hard-driving scales, as did the men. While a significantly greater proportion of the CHD cases were married, the marital status and religion of the patients were not significantly related to JAS classification.

The following study is relevant because a large population of women were included in this CHD screening project. The relationship between Type A, as measured by the JAS, and sex, age, socioeconomic status

(SES), and other CHD risk factors were examined by Shekelle, Schoenberger, and Stamler (1976). The battery of screening tests included measurements of height, weight, serum cholesterol, serum uric acid, plasma glucose, heart rate, and blood pressure. The purpose of this study was to investigate the relationship of these variables to compliance with a recommendation to seek medical evaluation of abnormal screening test results, and to prevalence of MI. The participants were 3232 men and 876 women initially surveyed in the Chicago Heart Association Detection Project in Industry from January 1972 through January 1973. The participants were categorized for purposes of analysis into four groups according to sex and age: 2021 men aged 25-44, 1211 men aged 45-64, 474 women aged 25-44, and 402 women aged 45-64 years.

The researchers found Type A scores to be positively correlated with SES in all four sex-age groups. There was a consistent tendency for Type A individuals to have higher educational and occupational status than Type B persons. After controlling for SES, men and women did not differ significantly in their mean Type A score. Both older age groups had lower mean Type A scores than the younger age groups.

The occurrence of high blood pressure was positively related to the JAS Type A score in employed women, aged 45-64, but unrelated in younger women or in men after controlling for the effects of age, relative weight, and SES. Prevalence of MI in middle-age men was positively related to the Type A score after controlling for age, diastolic blood pressure, serum cholesterol, and cigarette smoking. Type A score was

unrelated to level of serum uric acid, plasma glucose after challenge, or relative weight. Compliance with a recommendation to obtain medical evaluation of suspect screening test results was unrelated to Type A score.

In the next study a different population was examined, namely the college student population. Type A behavior is thought to develop during one's childhood throughout adulthood and therefore would be observable in the college population even before they enter the employment situation. Waldron, Hickey, McPherson, Butensky, Gruss, Overall, Schmader, and Wohlmuth (1980) examined undergraduate males and females for the relationship between their coronary-prone behavior pattern and several physiological, behavioral and psychosocial characteristics. At the beginning and end of the semester, each student completed the JAS to determine behavior pattern. Each student recorded the amount of time spent and success achieved at a variety of academic and nonacademic activities. Each student also completed a diary recording the activities during the preceding week, and associated feelings of tension, moods, headaches or sleep disturbances during the preceding 24 hours. Blood pressures were recorded on weeks 5-7 and weeks 9-14. In order to evaluate whether Type A behavior increases with external demands for performance, the students's behavior pattern scores at the end of the semester, during final exams, were compared to their scores at the beginning of the term.

Waldron et al. found that the Type A scores were not correlated with average blood pressure. For the female students, Type A scores

were correlated with a history of family hypertension. Surprisingly, higher Type A scores were not associated with greater increase in blood pressure following reported disruptions of normal life routines.

Type A behavior was significantly related to academic activities. Type A scores were positively correlated with the total number of hours per week devoted to classes, study, organized activities and paid employment for all students. For women, Type A scores were negatively correlated with hours per week spent relaxing or sleeping. For both sexes, students who were more Type A had higher grade point averages. For the women in this sample, grade point average, study hours, and Type A scores were all positively intercorrelated.

Waldron et al. also tested the relationship between Type A scores and career plans. Women who had not chosen a specific career goal had lower Type A scores than women who had already chosen a career goal. While Type A scores were positively correlated with academic activities and success, Type A scores were not positively correlated with other types of activity or social success.

Examination of the psychological correlates found no significant relationship between Type A behavior and reported levels of tension or anxiety. For women there was evidence of the time-pressured style of life and reported feelings of anger. Neuroticism emerged as a strong correlate of Type A scores for women, along with the frequency of being an officer or organizer of group activities.

Waldron et al. found that there was a tendency for Type A scores to increase from the beginning to the end of the semester and that students

who had more academic pressure had a greater increase in Type A score. Women's scores increased significantly by the end of the semester while the men's did not. Among women, those who were taking more courses and those who increased their study hours more throughout the term had a greater increase in Type A. The researchers were unable to account for the sex differences in the change in Type A scores. They did mention that the women at this prestigious university all have high career goals, half of whom plan on obtaining doctoral degrees. These ambitious young women have Type A scores which are higher than is typical for women their age, +.05 as compared to -4.3 for a large sample of white women of the same age (Waldron, Zyzanski, Shekelle, Jenkins, and Tannebaum, 1977).

The researchers concluded that career-related pressures to perform can result in an increase in the Type A behavior. In this society Type A behavior pattern appears to be rewarded by increased academic and vocational success which may encourage the development of this behavior pattern. Increased pressure to perform academically, or on the job, may produce increases in the Type A behavior pattern.

Waldron et al. (1977) analyzed data pertaining to sex, age, educational and racial differences for their relation to the presence of Type A behavior pattern in employed men and women. The participants in this study were 3667 white men, 1149 white women, 265 black men, 226 black women, all aged 18-64 who were initially surveyed in the Chicago Heart Association Detection Project in Industry in 1972-1973. These participants completed either the 1969 or 1972 version of the JAS. The

researchers were interested in how these different sex-race-age subgroups would score on the JAS and its three subscales. The four factor analyses of responses given on the JAS in this study yielded factors very similar to the factors previously derived for the WCGS sample.

Waldron et al. found that for the employed women in this sample the Type A and Speed and Impatience scores peak at about ages 30-35. The scores for men do not show this peak. For Job Involvement scores there is a much more pronounced peak for men than for women at these ages. Hard-Driving and Competitive scores are higher at older ages for both men and women, but the gradient for the younger age groups is steeper for women. Job Involvement scores are higher for 26-44 year olds than 18-25 year olds among the more educated. For the less educated, these scores tended to be lower for the older group. Overall there were no substantial sex differences in reported feelings of time pressure and tendency to rush.

Looking at educational differences, the researchers found that more educated whites had significantly higher Type A and Speed and Impatience scores than less educated whites, while the differences for blacks were not significant. For both races, the more educated had significantly higher Job Involvement scores than the less educated.

Waldron et al. argued that because Type A women tend to be more hard-driving, competitive, energetic and hurried, they probably are more likely than other women to seek employment. If women who are less Type A are more likely to be housewives, then the higher the proportion

of housewives in an age group, the higher one would expect the average Type A scores to be for the employed women in that age group. Young women are more likely to work before the time when they begin a family. Therefore at ages 30-35 there may be a greater tendency for women who are not Type A to stay at home, and Type A behavior pattern would appear more predominant among those women who are still employed at ages 30-35. In comparisons of employed men and women of similar educational status, age, and race, the researchers found significantly higher Type A scores for men aged 18-25 but not at older ages. Because most women in this age group have not begun their families, the more Type B women still remaining in the work force at this young age probably explains why employed women are significantly less Type A than employed men in this younger age range.

Next, let us look more closely at the Type A behavior pattern in women per se and its relationship to socioeconomic status. Waldron (1978) compared housewives with employed women. The participants in this study were drawn from two samples. Forty-five women were selected from a suburban middle-class neighborhood and 47 were members or attenders of a Protestant church in a nearby neighborhood of the same suburb. All women were white, aged 40-59 years. Each woman completed the JAS, the SI, the Taylor Manifest Anxiety Scale, and a brief questionnaire about occupation and education of self, husband and parents, volunteer activity, and number of children.

For systolic blood pressure, women with pressures over 135 mm Hg were grouped with those on blood pressure medication in the high blood

pressure group. For diastolic blood pressure women with pressures over 80 mm Hg were included in a high blood pressure group. Women who worked more than 30 hours a week were classified as employed fulltime. Those who reported working five of more hours over their ideal hours per week were distinguished from the others in the sample. Women whose stated reasons for working were purely financial were compared to all others. Age was dichotomized at 50 or older. Women who were currently married were compared to those who were divorced, widowed or single.

Waldron found that women whose most recent occupation was classified as a higher status had higher Type A scores than women with lower status occupations. Women who were employed full-time had higher Type A scores than women who were employed part-time or not employed outside the home. More educated women who were employed full-time had higher Type A scores when compared either to women of similar education who were not employed fulltime, or to women who were employed full-time but had less education. Women who worked more hours than they preferred were found to have significantly higher Type A scores than others.

Type A scores were found to be significantly higher for women whose occupational status was higher than their husband's as compared to women with occupations of equal or lower status than their husband's. Type A women were also not significantly more likely to be married. There was no significant difference in Type A scores between currently married women and single, divorced or widowed women.

There was a significant positive relationship between volunteer work and Type A scores in the neighborhood sample, but not in the church

sample. There were no significant relationships between Type A and number of children or church attendance. Unexpectedly, women with higher diastolic blood pressures were found to have lower Type A scores.

Waldron concluded that the coronary-prone behavior pattern is correlated with higher occupational status for women, as has been previously reported for men. These data suggest that the Type A behavior pattern contributes to success in the vocational sphere. Since males are encouraged to succeed outside the home more than females, this socialization difference may account for the greater prevalence of Type A behavior pattern among men as compared to women.

As predicted, the coronary-prone behavior pattern was found to be more prevalent among women employed full-time than among housewives and women employed part-time. Type A women may be more likely to seek employment or less likely to leave jobs once they have begun. Pressures associated with employment (less time for family duties, etc.) may increase Type A behavior.

Lawler, Rixse, and Allen (1983) conducted a study to assess the coronary-prone behavior pattern and physiological responses to stress in adult women. The participants were 41 women, aged 25-55. Half of the women were professional women and the other half were housewives. The employed group included 8 attorneys, 4 physicians and 9 executives. The education level of the housewives and professional women was fairly close to each other. The women were assigned behavior types on the basis of the JAS. Each participant also completed a health questionnaire pertaining to health characteristics, demographic variables, and career or volunteer activities.

Lawler et al. found that the employed women were all Type As. The housewife population consisted of both As and Bs. The researchers further divided the two groups into three groups. These were (1) employed As, (2) unemployed As, and (3) unemployed Bs. Factor scores on the JAS were compared. Significant differences were found between all three groups when compared for the Type A score. Even the employed A and unemployed A groups were almost significantly different on the Type A score. On the three component factors of the JAS, the employed A and unemployed A groups tended to be similar to each other and significantly higher than unemployed Bs.

Lawler et al. noted that all Type A women scored much higher on Type A and Job Involvement factors than on Speed and Impatience and Hard-Driving factors of the JAS. The Type B women scored very low on the Type A, Speed and Impatience, and Hard-Driving factors relative to the Job Involvement factor. This dispersion of factor scores was different than scores derived from previous male populations. The researchers speculated that Type A women have been socialized to inhibit impatient and hard-driving behaviors, while Type B women are much more involved in the "non-job related" activities than Type B men.

Two interesting findings were reported from the health questionnaire data. Unemployed women reported twice as many children as employed women (3.0 for unemployed As, 3.1 for unemployed Bs, and 1.4 for employed As). When questioned about the desire to work, all employed women said that they would prefer to continue working. Six of the nine unemployed As said they would prefer to work, while all of the unemployed Bs preferred to remain at home.

For the physiological testing, more stringent definitions of Type A and B were employed leaving out scores between -5.00 and +5.00. The results were based on 19 employed As, 6 unemployed As and 9 unemployed Bs. The women were monitored for heart rate, blood pressure and skin conductance while resting, working mental arithmetic at their own pace, and completing visual puzzles first under a deadline condition and then at a quickened pace set by the experimenter. Differences were found in mean heart rate, second-by-second heart rate, systolic blood pressure and diastolic blood pressure. Specifically, the employed As had higher heart rates, while Type B women showed the largest phasic decelerations. For both systolic blood pressure and diastolic blood pressure, the unemployed As had the largest increases. The researchers then assessed only the housewife population so as not to confound employment status with Type A behavior. They found that Type A women showed greater heart rate reactivity, greater systolic blood pressure increases on all tasks, and a trend toward higher diastolic blood pressure levels throughout. Thus, the Type A women exhibited greater cardiovascular sympathetic reactivity than Bs, a finding that replicated many studies comparing male As and Bs.

Haynes, Feinleib, Levine, Scotch, and Kannel (1978) examined 1822 men and women in the Framingham Heart Study as previously described in this chapter. These participants, aged 45-77, were assessed in terms of behavioral personality types, situational stress, somatic strain, and sociocultural mobility. The researchers made a special distinction between working women and housewives. Housewives were asked the same

questions as men and working women, except that job-related questions were posed with regard to housework, and were worded in a slightly different fashion. Women who had been employed outside the home for over half their adult years were designated "working women" and the others were classified as "housewives."

Haynes et al. found that women were significantly less likely than men to exhibit the Framingham Type A behavior pattern or to be ambitious. Women were significantly more likely to show signs of emotional lability, tension, anxiety and anger symptoms than men, at all ages. The explanation for these sex differences may reflect a greater willingness to express symptoms and seek medical help. Also, the lower status or role expectations of women in society may explain their greater emotional reactivity as compared with men.

The women under 65 were also more likely to score higher on the emotional lability scale if they had experienced coronary disease. The cases of women with uncomplicated angina, angina with or without accompanying MI, and total CHD were significantly more likely to exhibit the Framingham Type A pattern than noncases. Consistent with the data on mean Type A score, the prevalence of UAP was significantly higher among Framingham Type A than Type B women at all ages. In every age group, Framingham Type A women were more likely than Type B women to have AP.

As the Type A behavior pattern is thought to be most readily experienced in certain environmental settings, the association of Type A behavior with CHD in women could be associated with employment status.

The researchers found that at every age working women (X = .37) scored significantly higher on the Type A scale than housewives (X = .29). The mean scores of working women were almost identical to the scores for men (X = .39). In each age group more working women and fewer housewives were classified as Type A than Type B. However, working in the home does not protect Type As from higher rates of angina or CHD when compared to Type Bs.

The researchers suggested that the American workplace may be somewhat responsible for the full development of the Type A behavior. An alternate interpretation was that women with Type A qualities are self-selected into the work environment.

Chesney (1979) presented a lecture on cultural and sex differences in the Type A behavior pattern. She stated that the progress of research with women has been slowed for two reasons. First, the Type A behavior pattern (as defined by the Structured Interview) has not been established as a risk factor for women in a prospective study. Secondly, we do not have any measure of the coronary-prone behavior with demonstrated predictive validity for women. Chesney referred to Waldron's studies where Waldron found: (1) few women expressing a sense of time urgency or excessive work pressures, (2) only a small percentage of women reporting ambition to achieve greater success in either work or home activities, and (3) many women expressing the desire not to be competitive.

Chesney stated that the work emphasis in the Structured Interview (SI) and the Jenkins Activity Survey (JAS) may bias some of the research

with women since only half of the adult female population in this country are employed. Also, a woman's reasons for employment are often different than for men who have been brought up with the expectation of someday being employed. She also noted that in the SI where the subject's social behaviors such as interrupting, raising the voice volume, etc. are important, ratings of interviews with women may be influenced by the extent to which women are socialized. Chesney concluded from the sex difference research that women are taught more than men to be concerned about being nice, or liked, during interviews.

Waldron (1976) explained that genetic factors make some contribution to the sex differences in aggressiveness, but the aggressiveness among males varies depending on childrearing and cultural conditions. Boys are often encouraged to achieve in the occupational world while girls are encouraged to seek success in the domestic sphere. Thus it seems that social and socioeconomic pressures related to sex-appropriate behavior for men push them to develop the coronary-prone behavior pattern.

To summarize the previous research, Type A behavior has been observed in college students even before entering the employment situation. Type A was found to be related to more hours spent studying, less hours of relaxation and sleeping, and a higher grade point average. College women who had chosen a specific career goal had higher Type A scores than women who were undecided.

The coronary-prone behavior pattern appears to be more common among employed women than among housewives of the same age. Among the

employed population, Type A behavior has been found to be more common among men than among women at young ages, and these sex differences are insignificant at older ages. Considering all adults of both sexes, the coronary-prone behavior pattern is more common among men than among women of the same age.

Success in the traditional male occupational role seems to be associated with the coronary-prone behavior pattern, and the pressures of employment may be associated with increased blood pressure. Since males are socialized to be more competitive, aggressive, and success-oriented they have, at the same time, been encouraged to develop the Type A behavior pattern which has been determined to be a significant risk factor for CHD.

The competitiveness and aggressiveness consistent with Type A behavior seems to fit the traditional male stereotype. The researchers report that employed women have a higher incidence of Type A behavior than nonemployed women. Higher Type A scores in women is associated with higher occupational status, and fulltime employment as compared to parttime employment. Type A behavior in women seems to be related to nontraditional female roles.

CHAPTER II

ACHIEVEMENT AND SEX ROLE ORIENTATION

This chapter reviews Atkinson's risk-preference model, attribution theory, and the projective assessment of achievement motivation which are necessary to understand the foundation upon which achievement studies with women are based. Early research in the area of achievement motivation focused primarily on male subjects. However, as studies addressing achievement motivation began to take place, the investigators found that men and women achieved in different ways and in different settings.

Achievement striving in women may not necessarily be evidenced in higher occupational status, higher education, and higher income as it is for men. One needs to take into consideration the ways in which women achieve in the family sphere in addition to the work sphere. Maehr (1974) argued that achievement behavior may take a variety of forms and that contextual conditions that elicit achievement motivation should be considered. He also emphasized that the previous literature on achievement may have too quickly assumed that certain cultural groups are lacking in motivation as far as achievement is concerned.

In general, the term motivation has referred to inner states, needs, or drives of the organism which prompt and guide behavior. Maehr felt that researchers should look more to overt behavioral routines for study: change in direction (choice), persistence, and variation in performance when capacity is in some sense controlled. He offered

guidelines for defining achievement behavior: behaviors which are measured against some standard of excellence, behaviors for which the performer has a sense of being responsible for the outcome, and behaviors which present a level of challenge and involve some degree of uncertainty for success. Maehr concluded that cultural relativity must be addressed in the definition of achievement motivation.

It appears that both sexes learn early in life from their parents, teachers, peers, and other social agents, to conform to sex-appropriate behavior. However, these sex-roles often restrict an individual's growth and development by limiting his/her choice of behavior. Following this line of thought, Horner (1972) suggested that women associated negative consequences with achievement in sex-inappropriate areas. She argued that due to our culture's socialization processes, women experienced a "psychological barrier" or a "fear of success," which inhibited their achievement in traditionally male areas, virtually limiting this type of achievement only to men. Research will be presented to support the idea that achievement strivings in women are likely to be expressed in activities which are defined as sex-appropriate, such as in the home or in interpersonal relations.

In the concluding sections of this chapter, studies will address the relationship between achievement and sex-role orientation. Women who define their sex role to include behaviors considered traditionally male, such as working outside the home, appear to be aware of their needs, are achievement oriented, are able to set realistic goals, and attempt to maximize their potential. Bem (1974) argued that for healthy human functioning and full actualization, both masculine and feminine

attributes are essential. She offered the concept of androgyny to describe a person who exhibits an equal amount of both masculine and feminine characteristics. Several of her experiments will be reviewed.

Achievement motivation differences between career-oriented women and homemaking-oriented women will also be examined. Women employed outside of the home have defined their role to include traditionally masculine activities. Research will be presented suggesting that working women may have sought employment as a way of expressing their higher levels of achievement motivation. These women appear more autonomous than the homemaking-oriented women, have pursued more education, and appear more career committed.

Atkinson's Risk-Preference Model

Atkinson stressed the importance of "personality factors" in the determination of achievement motivation. This implied that achievement motivation is a trait and that this trait acquired in the early years tended to remain as a relatively stable predisposition throughout the lifespan. Atkinson developed his own "risk-preference" model of achievement strivings in 1959 and 1964. A major variable in the study of achievement motivation was the concept of subjective probability of success (P_s). Achievement oriented behavior was seen as a function of the result of desire for success as compared to fear of failure multiplied by P_s and $(1-P_s)$, or the incentive value of success. In practice, however, the subjective probability was usually replaced by some objective probability estimate. This often took the form of norms of success.

Achievement behavior was viewed as the result of an emotional conflict between hopes for success and fears concerning failure. Associated with every achievement-related action is the possibility of success and pride and the possibility of failure and shame. The strengths of these anticipated emotions determine whether an individual will approach or avoid achievement-oriented activities. Atkinson's model leads to the prediction that individuals high in achievement needs will prefer tasks of intermediate difficulty, whereas persons low in achievement will prefer tasks that are either easy or difficult. Unlike the easy or difficult task, the moderate task provides the individual with feedback about his own efforts and abilities.

Weiner (1978) noted that although individuals high in achievement needs have been characterized as hope oriented, they can also be described as information or feedback seeking. This latter explanation shifts the emphasis from affective to cognitive correlates of the disposition to achieve. That is, differences in risk-preference between high and low achievement motive groups may be derived from a differential desire for self-evaluation, rather than only distinctly different emotional anticipations.

Attribution Theory

Weiner emphasized that foremost among the mental events affecting achievement-related behaviors were causal attributions. This referred to the perceived causes of success and failure. Research has shown that the four factors perceived as most responsible for success and failure are ability, effort, task difficulty, and luck. These causes of success

and failure have three dimensions. In the dimension of locus of responsibility, the causes are perceived as either internal (in the person) or external (in the environment). Ability and effort are causes originating within the individual, while task difficulty and luck are causes within the environment. Internality for attributions of specific events is related to pride and shame. Greater positive affect for success (pride) and greater negative affect for failure (shame) are found when internal attributions are made than when external attributions are made. A second dimension of causality is the stability or constancy of a cause. Ability and task difficulty are relatively stable causes, while effort and luck may be highly changeable. The third dimension is the intentionality or controllability of a cause.

Numerous studies have shown that higher expectancies for personal success are held by men and boys than by women and girls. People who expect to do better on an achievement task actually perform at a higher level (Feather, 1966). People who have experienced more success expect to do better than less competent or less successful people (Montanelli & Hill, 1969). It is difficult to assess how much of their superiority is due to their higher ability and how much is the result of having the expectancies.

Crandall (1969) looked at the expectancies of men and women in order to explain sex differences in achievement behavior. In a variety of tasks, ages, and settings, she found that girls and women had generally lower expectancies than males. In fact, when a person's level of ability was known, males tended to overestimate their future success

relative to their ability, whereas females tended to underestimate their future performance.

Marks (1972) pointed to another difference between men and women pertaining to individual beliefs about personal power. He found that women saw their locus of control as external whereas men felt their locus of control to be internal. The belief that the men held was probably due to previous exploration and mastery of the environment, experiences which lead to higher self-esteem. Women appear to have attributional patterns that are the result of lower self-esteem. Another possible explanation is that these patterns serve to create lower self-esteem. Unger (1979) also noted that men and women differed in self attributions about causes of success and failure. Women were more likely to attribute their success to luck whereas men would take credit for their success and attribute the outcome to skill or ability. When failure occurred, women would be more likely than men to attribute their failure to lack of ability, whereas men would attribute their failure to lack of effort or task difficulty. Women who attribute their successes more to luck and less to their abilities feel less pride in their successes and less secure about the possibility of continued successes since luck is not only external, but unstable. These findings refer to sex-inappropriate achievements, such as academic achievement. Frieze (1975) speculated that women might attribute success in traditionally feminine areas to internal causes, such as ability and effort, and take more credit for these successes.

Thematic Apperception Test (TAT)

Achievement motivation was first assessed using a projective test called the Thematic Apperception Test (TAT). Weiner cited Murray as the primary investigator who called attention to a need for achievement. In 1938 Murray also developed the TAT which supposedly revealed "covert and unconscious complexes" pertaining to numerous needs, including the need for achievement. Thus the TAT measured achievement produced in fantasy. The TAT was subsequently used by many investigators to assess achievement needs.

In 1953 McClelland and his associates conducted a systematic study of achievement motivation using the TAT to measure achievement needs. Learned inner drives and culturally defined personality patterns were stressed in McClelland's conceptualization of achievement motivation. Weiner concluded that one of the main controversies surrounding the use of the TAT concerns the report that internal consistency and test-retest reliability are below acceptable standards. However, these criticisms are dependent on one's definition of acceptable standards and alternative objective measures have not been established as valid indicators of achievement needs.

Studies employing the TAT always include "ego-involving" instructions to arouse achievement motivation. However, females, unlike males, do not show arousal differences between neutral and arousal situations. Therefore it was thought that TAT methods were not adequate to measure achievement motivation in women. TAT studies including women as subjects yielded conflicting conclusions pertaining to achievement

motivation. It seems that achievement is a more complicated motivational system for women than for men because of cultural inhibitions and social norms that at one time restricted women to the home.

Achievement in Women

Stein and Bailey (1973) extensively reviewed the literature on achievement orientation in women covering the years 1958 to 1972. They found that females do develop achievement orientations and express them in many areas, not just academic and occupational achievement. Studies with behavioral indices of achievement were given more weight than those using projective or psychometric indices because of their greater validity for women. They found that women's achievement orientations are likely to appear in areas which are culturally defined as sex-appropriate activities. Social skills, such as rewarding interpersonal relationships, seem to be an important area of achievement for women. Studies showed that arousal conditions stressing social skills often result in increased achievement imagery.

Stein and Bailey found that achievement striving conflicts with the traditional feminine role. Women in male dominated occupations have relatively high masculine role identification, but this does not mean that their identification is low with the feminine role. It seems that some women redefine their roles to include achievement behavior outside of the domestic sphere. Women with high achievement motivation define achievement as being more feminine than those with low motivation.

While there has been much published research examining achievement motivation in women, the conclusions are often conflicting and

confusing. Alper (1974) reviewed some of the achievement literature using female subjects and concluded that the various conclusions drawn from the female achievement motivation literature appear to be a function of a wide variety of methodological differences from study to study, rather than a basic instability of the motive in women. Alper described several independent variables including the subjects' personality factors, especially the differences in their sex-role orientation. Sampling differences such as age, involvement in task and university setting (such as elite institutions) were discussed as important variables. The form and contextual differences in the stimulus cues ranging from unspecified levels of achievement to sex-inappropriate areas were also variable. She pointed out that one must also take into account the differences in scoring the protocols.

Achievement behavior is learned and hopefully reinforced and encouraged by others around an individual. Most researchers agree that men and women are socialized in different ways, and consequently rewarded differently for achievement strivings. It appears that achievement behavior is more consistent with "masculine" characteristics, and therefore achievement behavior in women conflicts with adherence to the traditional feminine stereotype.

Achievement Motivation and Its Relationship to Socialization Experiences of Children

As a child, each male and female is taught how to behave to fit his/her specified role in society. The two extremes of sex-typing in socialization emphasize independence for males and dependence for

females. Because the parents and significant others act as role models for their children, the role of socialization, specifically sex-role orientation, is a prominent influence in the expression of achievement in women.

Stein and Bailey discussed the development of achievement-related patterns in females. The studies they reviewed suggested that females as compared to males were more anxious about failure, more cautious in risking failure, and more likely to assume responsibility for failure when it occurs. All of these characteristics appear to increase during middle adolescence. Some authors have suggested that adolescence is a particularly important event because of social pressures to become more feminine and attractive to males. However, it is likely a female's response during adolescence depends partly on her earlier patterns of achievement-related behavior.

Stein and Bailey concluded that a moderate, but not high, level of parental warmth or nurturance is most conducive to achievement behavior in females. Permissiveness in a context of moderate to high warmth is associated with independence in children while restrictiveness in such a context is associated with dependency and conformity. Kriger (1972) found that homemakers perceived their parents as significantly more restrictive in comparison to career women who perceived their parents as relatively permissive. Achievement oriented behavior results from explicit reinforcement and attempts to accelerate the child's development. It seems that the child-rearing practices that lead to femininity, such as restrictiveness, overprotectiveness, and encouragement

to be quiet, nonaggressive, noncompetitive, and obedient, do not promote achievement behavior in women.

However, as the role of mother and father change due to converging sex-roles, the socialization experiences of the child will also change. Hoffman (1977) addressed two important changes in these family roles. These were the decreasing amount of time devoted to motherhood by women and a related change in employment patterns. He attributed the decrease in family size to our current economic recession, our concern with overpopulation, and improved methods of birth control. He also asserts that the currently observed sex differences in personality are largely a function of different socialization experiences. As the differences in socialization experiences diminish, so will the differing social orientations and cognitive styles.

Hoffman thought that socialization involved the parents simply acting towards the child in terms of societal stereotypes which the parents have already internalized and which reflect adult social roles. Using desire for achievement as an example, if you compare females and males on sustained, anxiety-free, goal-directed behavior, you find differences that favor males. Women find that during the years when heterosexual relationships seem quite important, the rewards of high academic and occupational successes are uncertain, and often accompanied by affiliative loss. Also, women have satisfying alternatives, such as marriage and motherhood, which are often viewed as incompatible with career achievement.

Hoffman felt that males received training in independence because they were seen as having to grow up to earn a living and cope with the environment. However, women do not receive this kind of training and therefore fail to develop independent coping styles, a sense of competence, and even specific skills. Women as compared to men have less of a sense of mastery over the environment.

Horner (1972) noted that females who feel or who are competent are deviant in terms of the traditional feminine sex-role standard and thus are likely to feel conflicted, anxious, and vulnerable to rejection. However, because of cultural values and social desirability factors, such females are more likely than traditional women to experience rewarding, ego-enhancing satisfactions.

In order to examine the influence of maternal role models and their attitudes towards achievement in their daughters Baruch (1976) studied 79 fifth-grade girls and 49 tenth-grade girls from two suburbs of Boston examining what differentiates girls who do and do not attribute competence-related traits to themselves. Mothers of 51 of the fifth-graders and 38 of the tenth-graders were included to examine the kinds of maternal influences associated with a daughter's perception of herself as competent.

Baruch found that girls with higher self-perceptions of their competence have received both support for and modeling of such self-images from their mothers. Mothers of high-competence girls perceive their own competence to be high and value in their daughters such traits as independence, assertiveness, and achievement. The values

significantly more important to mothers of high- versus low-competence adolescent girls (ambition, independence, being a good student) are relevant to the very traits adolescent girls are conflicted about. These mothers seemed less concerned with self-control and responsibility and this may reflect their ability to tolerate some deviance and to refrain from oversocializing daughters into the traditional feminine sex role. The finding that girls who feel competent have high career aspirations and desire small families suggests that such girls will anchor their future identity in work as well as motherhood. Baruch finds this dual focus adaptive in a society in which problems of long life span and overpopulation make it no longer viable to devote one's whole life to childrearing.

Maternal employment also influences one's adherence to gender role stereotypes. Broverman, Vogel, Broverman, Clarkson, and Rosenkrantz (1972) cited studies indicating that the husbands of working women share in more household tasks than the husbands of more traditional women. Therefore, the children's perception of sex-related behavioral roles is less traditional. Female children in these less traditional homes are more likely to pursue a career when they are adults. Daughters of employed mothers perceived women as more competent than do daughters of homemaker mothers.

Restrictive Sex Roles

In our society, the demand put upon each individual to conform to various expectations, including the appropriate sex-role, often denies women the opportunity to achieve in the traditionally male occupational

sphere. A woman's personality and motivational attributes are frequently overlooked because her sex-role in the culture is predetermined. Thus conforming to sex-appropriate behavior is restrictive to one's development.

Unger found that achievement has different meanings for each individual. She noted that women may achieve through affiliative and social behavior. She believes that society measures and rewards achievement differently for men and women. Achievement is one of the few ways that a person can acquire status in this society. However, women's achievements in the home are not defined as such. Unger felt that women were socialized to deny the possibility of achievement. That is, successful performance and competence are inconsistent with the traditional feminine role.

Helson (1972) wrote an article about the social determinants of attitudes towards career women over the last 40 years and how changes in these attitudes have been reflected in the design and interpretation of psychological research. She argued that the earlier research on career women was misinterpreted by biased male psychologists. She noted that these men overlooked the "high achieving" women in their studies instead saving their enthusiasm for the "future family-oriented under-achievers." She noted that the studies that showed career orientation in a favorable light received very little attention. She concluded that the studies she reviewed indicate that it is naive for an individual woman to blame herself for not achieving in various professions. She felt the problem was cultural, and the society and institutions could be changed.

The literature supports the notion that achievement strivings allow one to acquire status and recognition in our society. Yet, achievement striving is not consistent with the feminine sex-role stereotype. Men and masculine characteristics are more highly valued in our culture than women and feminine characteristics. Even women themselves have internalized these societal stereotypes and tend to have lower expectations of women and devalue their attempts at achievement (Pheterson, Kiesler, & Goldberg, 1971).

Feather and Simon (1975) observed that there was a division of labor along sex lines so that higher status jobs are usually held by males while the other jobs are usually filled by females. Part of the definition of sex roles in society involves occupations which are considered traditionally appropriate for each sex. The investigators felt that success at an occupation was more valued when this success was consistent with societal conceptions about the appropriateness of the sex orientation. Failure at an occupation would seem to be more distressing when this failure was inconsistent with traditional ideas about the sex role than when it was consistent with these expectations.

High school girls from an elite private school in Australia were presented short verbal cues in which male or female characters succeeded or failed in either nursing, teaching, or medicine so as to sample male- and female-dominated occupations. The participants then filled out rating scales and made judgments about the character's personality, likely causes for success or failure, and the possible consequences that might follow the success or failure.

The results showed that success and failure in competitive achievement situations are perceived and evaluated according to the sex of the successful or unsuccessful person. Males who succeeded were seen as luckier, busier, wiser, more logical, and more honest than males who failed. But these differences were opposite in females. The female characters were seen in this positive light when they failed, rather than when they succeeded. The participants attributed lack of ability as a more important cause of female failure than of male failure. They saw ability as a more important cause of male success than female success. When the female character succeeded at medicine, subjects were more likely to explain her success in terms of an easy course of studies, whereas an easy task was seen as a less important cause when the male succeeded at medicine.

A person was seen as less powerful, more obedient and polite, and more feminine if he/she succeeded or failed at nursing than at teaching or medicine. Success at nursing by either a male or female character was seen as relatively more feminine than success at either medicine or teaching in that order, whereas failure at teaching was seen as relatively more feminine than failure at nursing and medicine in that order.

Feather and Simon concluded that sex is a major factor when evaluating a person's success or failure, the possible consequences of such an outcome, and the causal personality features attributed to such a person. The authors assumed that the subjects' responses reflected their conceptions about sex roles. This study illustrates the assertion

that femininity and achievement are two desirable but mutually exclusive goals for women in our society. Apparently success for women has both pleasant and unpleasant implications.

Broverman et al. (1972) reviewed some of the literature pertaining to sex-role stereotypes. They defined sex-role standards as the sum of socially designated behaviors that differentiate between men and women. Many investigators have expressed the concern that trying to adjust to these stereotypes can limit the development of abilities of both men and women. The authors postulated that women who are perceived and who perceive themselves as relatively incompetent may find it less stressful to limit themselves to attending to home-related affairs instead of entering a more competitive employment situation outside the home. The authors cited a study in which mothers with high competency self-concepts, as measured by a sex-role questionnaire were found to have significantly fewer children than mothers who perceived themselves to be low on the competency items. Another possible explanation for this finding is that having significantly fewer children to cope with allows greater feelings of competence.

Projective and psychometric measures of achievement motivation that have been developed for the male population often yield conflicting results when used with women. Vaughter, Ginorio, and Trilling (1977) overcame this problem by comparing the vocational achievements of men and women with equal ability. According to the ability model of sex differences in achievement, if groups of men and women equivalent in ability were examined, one would find that the groups had attained the same levels of achievement.

Vaughter et al. compared the vocational achievements of Phi Beta Kappa men and women with the population of college educated males and females as derived from the 1973 census bureau. The researchers found that Phi Beta Kappa men were well represented in occupations of higher prestige but that there were as many, if not more, college males represented in the same prestigious occupations. These college males were more represented in the prestigious occupations than the Phi Beta Kappa women, followed by the college females. Vaughter et al. concluded that women who achieve are discriminated against and not recognized as achievers. The researchers did not report the period of time after college graduation when the men and women were surveyed. However, out of the Phi Beta Kappa group, 26 men and only 9 women were currently enrolled in graduate schools in the high prestige occupations of law and medicine. One could speculate that the women were less represented in the prestigious occupations because they had taken time off from their career-related activities to have children.

Broverman, Broverman, Clarkson, Rosenkrantz, and Vogel (1970) hypothesized that mental health clinicians would tend to conceptualize standards of optimal mental health in terms of internalized societal stereotypes placing more value on masculine stereotypic characteristics than stereotyped feminine characteristics. The authors suspected that a double standard of mental health existed where concepts of health for a mature adult was meant primarily for men, and less so for women. The participants in this study were 46 men and 33 women working either as psychologists, psychiatrists, or social workers currently functioning in

clinical settings. One-third of the participants completed the Stereotype Questionnaire developed by Rosenkrantz et al. to describe either a healthy male, female, or adult (sex unspecified). The analysis of the data indicated that the male and female professionals did not differ significantly from each other on their judgments of behaviors and attributes which characterize a healthy male, female, and adult. However, the professionals considered socially desirable masculine characteristics as more healthy for the mature adult (sex unspecified), and for the male, but not for women.

Broverman et al. explained that an adjustment notion of mental health, plus the different norms for male and female behavior in our society automatically lead to a double standard of mental health. Thus, for a woman to be healthy from an adjustment viewpoint, she must try to adjust to and accept the behavioral norms for her sex, even though these behaviors are generally less socially desirable and considered to be less healthy for the sex-unspecified, competent, mature adult.

Motive to Avoid Success

Horner (1972) pointed out that despite the fact that we have a culture and an educational system that encourage and prepare men and women identically for careers, the data indicate that social and internal psychological barriers rooted in this image limit the opportunities to men. She argued that most women have a motive to avoid success, that is, a disposition to become anxious about achieving success because they expect negative consequences as a result of succeeding. The presence of a motive to avoid success implies that the

expression of the achievement-directed tendencies of motivated young women is inhibited by the arousal of a thwarting disposition to be anxious about negative consequences they expect will follow the desired success. These consequences include social rejection and/or feelings of being unfeminine.

In 1968 Horner (cited in Horner, 1972) hypothesized that the motive to avoid success would be significantly more characteristic of women than of men, and also more characteristic of high achievement oriented, high ability women who aspire to achieving success than of low achievement-oriented, low ability women who neither aspire to nor can achieve success. The motivation to avoid success would inhibit the individual's tendency to do well in performance situations. Horner expected that the negative incentive value of success should be greater for women in interpersonal competition than in noncompetitive achievement situations, especially against male competitors. Ninety females in the initial study responded to the verbal cue, "After first term finals, Ann finds herself at the top of her medical school class." For the 88 males, the cue was, "After first term finals, John finds himself at the top of his medical school class."

Horner described the motive to avoid success being scored as present if the subjects made statements in their stories showing conflict about the success, the presence or anticipation of negative consequences because of the success, denial of effort or responsibility for attaining the success, etc. In response to the successful male cue, more than 90% of the men in the study showed strong positive feelings,

indicated increased striving, confidence in the future, and a belief that this success would be instrumental to fulfilling other goals. On the other hand, in response to the successful female cue, 65% of the girls were disconcerted, troubled or confused by the cue. Unusual excellence in women was clearly associated for them with the loss of femininity, social rejection, or personal or societal destruction.

Horner further hypothesized that the motive to avoid success would affect performance only in situations in which it is aroused. She compared women with either high or low motives to avoid success and evaluated their performance in competitive situations with men, and in noncompetitive but achievement-oriented situations. The results suggested that young women high in the motive to avoid success would be least likely to develop their interests and explore their intellectual potential when competing against others, especially against men.

Horner concluded that her data argue that unfortunately femininity and competitive achievement continue to be viewed as two desirable but mutually exclusive ends. It seems that the most highly competent and otherwise achievement motivated women, when faced with a conflict between their feminine image and expressing or developing their abilities and interests, adjust their behaviors to their internalized sex-role stereotypes.

Horner's "motive to avoid success" studies spurred a new interest in women's achievement motivation. However, after numerous researchers explored the "fear of success" concept, other factors were found to confound the conclusions of Horner's early studies. Investigators now

suggest that sex-role attitudes and sex-role orientation may be helpful in determining women's need for achievement.

In 22 studies reviewed by Tresemer (cited in Peplau, 1976) the median rate of fear of success was 47% for women and 43% for men. In over half the studies, fear of success was actually more common among men than women. Peplau (1976) assessed the usefulness of sex-role attitudes as an alternative predictor of women's achievement behavior. She also attempted to clarify the impact of mixed-sex competition that might facilitate as well as impair the performance of women who fear success. Peplau's study compared the relationship of fear of success and sex-role attitudes to women's performance in both noncompetitive and competitive achievement situations. While Horner singled out competition as most likely to arouse fear of success, Peplau hypothesized that the possible violation of sex-role standards associated with some forms of competition was of prime importance. Concerns about preserving at least an illusion of male superiority may affect women's achievement behavior.

Peplau found fear of success present in the stories of only 30% of the women, and in 44% of the men. No significant relationship was found between fear of success and any measure of sex-role attitudes. In the team condition where students received a joint score based on their own and partner's joint effort, women with traditional sex-role attitudes performed significantly better than women with liberal sex-role attitudes. In the individual condition where members of a couple were told that their scores would be directly compared, women with

traditional attitudes performed significantly worse than women with liberal attitudes. A similar interaction between fear of success and noncompetitive/competitive achievement situations did not reach statistical significance. Fear of success was not correlated with the women's own sex-role attitudes, career aspirations, college grades, SAT scores, or self-ratings of "intelligence." Peplau found that women with liberal attitudes had higher educational and career aspirations, rated themselves as more "intelligent," and in fact had higher SAT verbal scores. Women with traditional attitudes did better in noncompetitive situations or in team competition; women with liberal attitudes did better in individual competition.

Peplau suggested that only women who maintain traditional beliefs about the feminine role are affected by fear of success. What fear of success appears to represent is a particular sensitivity to the sex-role implications of achievement settings and a concern that achievement behavior be manifested in sex-role-appropriate ways. Peplau concluded that sex-role attitudes emerge as a more substantial and consistent determinant of women's performance. Therefore, sex-role orientation is probably an important factor in predicting achievement behavior in women.

Achievement Motivation and Its Relationship to Sex-Role Orientation

The following three studies examine the relationship between achievement motivation and sex-role orientation. Gump (1972) investigated sex-role concepts of 162 college females in New York. She looked

at whether or not women accepted or rejected traditional sex-role attitudes, and examined the extent to which psychological well-being accompanied the traditional or nontraditional view. She utilized Fands self- or other-orientation to assess ideas about their sex roles. The traditional outlook was conceived as "other-oriented." These women would find personal satisfaction by fostering fulfillment in a husband and children. The "self-oriented" woman was achievement oriented, seeking fulfillment by maximizing her own potential.

Gump found that self-oriented women in comparison to other-oriented women planned to enter graduate school and were entering Ph.D. programs significantly more often than other-oriented women. She also found that women who saw themselves as needing something beyond a family to fulfill themselves tended to go about obtaining gratification from both a home and outside interests.

In looking at psychological well-being, the data suggested that purposiveness, resourcefulness, and self-direction may be inconsistent with the adoption of a role limited to traditional, other-oriented goals and satisfactions. Specifically, Gump looked at the women's scores on Barron's Ego Strength Scale. The high ego strength women were more aware of their needs, had a capacity to plan realistically in terms of them, and had defined goals. The low scorers appeared more inhibited, dependent, and were less open about their feelings and thoughts. Differences in ego strength were found to be associated with plans for marriage and a career, with women scoring the highest on ego strength actively pursuing both objectives.

In the next study, Alper (1973) looked at the relationship between role orientation and achievement motivation in 35 college women. She employed the Wellesley Role-Orientation Scale (WROS) and looked at the differences in the thematic content of the fantasies of subjects who scored at opposite ends of the scale. The WROS is a 24-item paper and pencil scale designed to measure sex-role preferences of college women. Each subject completed the WROS and also wrote stories to pictures of male and female persons as a projective measure of achievement motivation. The results of this study supported the prediction that achievement motivation in women is significantly related to sex-role orientation.

Brogan and Kutner (1975) felt that a need existed for a sex-role orientation scale which is both up-to-date in item content and phrasing, and focuses on normative views of appropriate male and female behavior. They designed and presented a scale that focuses exclusively on sex-role orientation, which they defined as normative conceptions of appropriate behavior for males and females. They conceptualized sex-role orientation (SRO) as a continuum ranging from traditional to nontraditional and including beliefs about appropriate behavior for both sexes.

Almost 300 subjects completed questionnaires containing the sex-role orientation items in the fall of 1974. Seventy of the subjects (69 females, 1 male) were graduate students in nursing, and 42 females and 12 males were undergraduates enrolled in a sociology course. Also, 45 married couples and 42 dating couples participated.

The results of this study replicated previous studies addressing sex and educational variables. Women's educational attainments were found to be associated with favorable attitudes toward equality of opportunity for women. The graduate student nurses were found to be more nontraditional in SRO, followed by the undergraduate females, and then the undergraduate males. These three groups were significantly different from each other in average SRO scores.

For both the married males and married females, younger persons were most nontraditional in SRO and older persons were most traditional in SRO. Age differences were significant for males but not for females.

Brogan and Kutner also expected the degree of authoritarianism to be directly related to the degree of traditional SRO. Correlations between an authoritarianism measure and SRO scores were significant for both graduate nursing students and undergraduate students, with more authoritarian persons tending to be more traditional in SRO.

Androgyny

Bem (1974) developed the Bem Sex-Role Inventory (BSRI) to measure the extent to which an individual is sex-typed, sex-reversed, or androgynous. The inventory includes a Masculinity scale (20 items), a Femininity scale (20 items), and a Social Desirability scale (20 items). These 60 items were chosen on the basis of sex-typed social desirability and not on the basis of different amounts of endorsement by males and females. The early BSRI characterizes a person as masculine, feminine, or androgynous as a function of his or her endorsement of these masculine and feminine personality characteristics. Bem classifies the

person as sex-typed, or sex-reversed when the difference between endorsement of masculine and feminine traits is large. However, the androgynous person endorses nearly equally both masculine and feminine characteristics.

Bem is most concerned about social change with particular regard to sex roles and gender. She decided to operationalize her concept of "androgyny" in laboratory research. Androgyny literally means man-woman (from the Greek: andro-male, and gyn-female). Bem took an abstract ideal and introduced it into psychological language as a new model of mental health, asserting that it can be measured and that its behavioral components can be observed, and ultimately cultivated. Bem's sex role research is based on two assumptions: first, that masculinity and femininity represent complementary domains of positive traits and behaviors that can in principle be exhibited in one masculine and feminine, instrumental and expressive individual. Second, for healthy human functioning and full actualization, both masculine and feminine attributes are not only possible but essential.

Bem first administered the 60-item inventory in 1973 to two populations of college students (N = 723, N = 194). To estimate the internal consistency of the inventory she computed coefficient alphas for the three components of the inventory. These scores were all highly reliable ranging from α = .70 to α = .86. Test-retest reliability over a four-week period for 56 subjects was highly reliable with a range of r = .89 to r = .93 for the component scales.

Bruck (1977) notes that when this test was given to a sample of over 2,000 college students about one-third were classified as significantly sex-typed, and one-third were androgynous. Fewer than 10% could be classified as sex-reversed, and the rest could not be classified as significantly sex-typed, androgynous, or sex-reversed.

Next, Bem and Lenney (1976) conducted a study to examine the sex-typed individual and the extent of his or her behavioral restriction. The researchers suspected that cross-sex behavior is motivationally problematic for the sex-typed individual and that he or she actively avoids it as a result. They hypothesized that sex-typed individuals would actively prefer sex-appropriate activities, even in situations where the sex-inappropriate activity was more rewarded (in money). They further hypothesized that the subject would experience discomfort and some temporary loss of self-esteem if they were actually required to perform cross-sex behavior.

Subjects were 24 sex-typed, 24 androgynous, and 24 sex-reversed members of each sex. Each student was given a list of 60 different activities (one-third masculine, feminine, and neutral) and was asked to choose 30 activities he or she would be willing to engage in while being photographed. It was explained that these pictures were needed for an experiment at another university. The activities were presented in pairs so that the sex-appropriate activity always paid less money than the other choice. After choosing 30 activities the students were informed that they were to pose for nine activities but that they would be paid for their 30 choices. Three of these activities were feminine,

masculine, or neutral in sex-appropriateness. After performing these activities the students filled out a questionnaire rating their attitudes towards each activity.

Sex-typed subjects were significantly more stereotyped than androgynous or sex-reversed subjects in the activities they selected. In addition, sex-reversed and androgynous subjects did not differ from one another. These results suggest that sex-typed subjects are significantly more likely than androgynous or sex-reversed subjects to prefer an activity just because of its stereotype as sex-appropriate.

As expected, the sex-typed students felt significantly worse after performing cross-sex activities than did either androgynous or sex-reversed students. Again, androgynous and sex-reversed students did not differ from each other. The sex role differences became even stronger when the student interacted with an experimenter of the other sex. The results indicated that sex-typed individuals experience the most negative feelings, discomfort, and feel the worst about themselves when they perform cross-sex behavior.

Bem felt that people should no longer be socialized to conform to outdated standards of masculinity and femininity, but should be encouraged to be androgynous. That is, they should be encouraged to be both instrumental and expressive depending upon the situational appropriateness of these various behaviors. She hypothesized that a nonandrogynous sex role can seriously restrict the range of behaviors available to an individual as he or she moves from situation to situation. In contrast the androgynous individual should be able to

remain sensitive to the changing constraints of the situation and engage in whatever behavior seems most effective at the moment.

Bem (1975) designed the following study to demonstrate both the behavioral adaptability of the androgynous individual, as well as the behavioral restriction of the person who is either sex-typed or sex-reversed. First, Bem had 42 undergraduates at Stanford University judge a series of behaviors on a 7-point scale according to how masculine or feminine each of 12 items was. Included in the list of activities were "Playing with a six-week-old baby kitten" and "Saying what you believe, even when you know those around you disagree." Both male and female students judged independence as significantly masculine and kitten playing as significantly feminine.

The first experiment employed a standard conformity paradigm to test the hypothesis that masculine and androgynous subjects would both do better at a stereotypically masculine behavior than feminine subjects. Nine masculine, nine androgynous, and nine feminine students of each sex from Stanford served as subjects. As predicted, masculine and androgynous subjects did not differ from one another in amount of conformity, yet both were less conforming than the feminine students.

In the second part of the study, 66 undergraduates, half male and half female, one-third classified either as masculine, androgynous, or feminine were given the opportunity to interact with a tiny kitten. Bem hypothesized that feminine and androgynous subjects would do better at a stereotypically feminine task than masculine subjects. The results of the male subjects supports the hypothesis that feminine and androgynous

males demonstrate greater overall involvement with the kitten than masculine males. However, the feminine females were found to show significantly less overall involvement with the kitten than were androgynous females. This finding seems to question the labeling of "playing with a kitten" as a feminine behavior.

From these experiments Bem concluded that androgynous subjects of both sexes displayed a high level of masculine independence when under pressure to conform, and they displayed a high level of feminine playfulness when given the opportunity to interact with a tiny kitten. The feminine females appeared to have the most serious behavioral deficit. The finding that androgynous females performed better than feminine females on the feminine task needs to be replicated with other tasks defined as feminine.

Bem has compiled earlier findings from other researchers. She notes that high femininity in women has been correlated with low self-esteem, low self-acceptance, high anxiety, problems with social acceptance, and poor social adjustment. High masculinity in adulthood for men has been correlated with high anxiety, high neuroticism, and low self-acceptance. A possible explanation for these findings is that men and women who have low self-acceptance and anxiety about their social adjustment may try to rigidly conform to appropriate sex-role stereotypes in an attempt to gain acceptance from others. Thus, strong sex-typed identification may be an effect rather than a cause of these negative behavioral correlates. Note that greater intellectual development has been consistently correlated with cross-sex typing (masculinity in girls and femininity in boys).

Bem hopes that researchers will begin to focus on the behavioral and societal consequences of a more flexible sex role self-concept. She feels that rigid sex role differentiation has outlived its utility, and the androgynous person will come to define a more human standard of psychological health.

A study that looked at achievement motivation and scores on the BSRI was conducted at Auburn University. Bedian and Hyder (1977) administered Bem's Sex-Role Inventory, Rotter's Internal-External (I-E) Locus of Control Scale and Mehrabian's Scales of Achievement. Subjects were 130 male and 81 female students. The investigators wanted to determine the relationship between achievement motivation and locus of control for these students who were categorized according to measures of Bem's masculinity, femininity, and androgyny. Previous investigators have found that sex-role stereotyped individuals are more external in their orientation than less sex-role stereotyped persons. Other researchers have found that women classified as nontraditional in sex-role orientation show a significantly higher need for achievement than their traditional counterparts. Bedian and Hyder found that for the androgynous females I-E scores and need for achievement correlated significantly. This result indicated a tendency for need for achievement to increase as feelings of external control decrease. No other statistically significant differences were reported.

The most recent Bem Sex-Role Inventory Professional Manual (Bem, 1981) now recommends that the subjects be classified into four sex-role groups on the basis of a median split, a standard research technique for

creating a typology from subjects' scores on any questionnaire or inventory. The BSRI treats masculinity and femininity as two independent dimensions thus enabling a person to indicate whether he/she is high on both dimensions (androgynous), low on both dimensions (undifferentiated), or high on one dimension but low on the other (either feminine or masculine). The original classification system defined the androgynous person as endorsing nearly equally both masculine and feminine characteristics. This new classification distinguishes between those individuals who score high on both masculinity and femininity, and those individuals who score low on both dimensions.

Achievement Motivation Differences Between Career-Oriented Women and Homemaking-Oriented Women

The present paper is concerned with why some women choose to become housewives while others choose employment and a career outside the home. Many studies have looked at differences in achievement behavior and achievement motivation between these two groups of women. Researchers are interested in how achievement related behaviors influence one's decision to set goals, pursue an education, and select a career. The populations under study are often college age women because of their easy accessibility. When evaluating these studies, one must realize that the conclusions drawn from this young age sample can only be tentatively projected onto the mature, adult female population with established families.

Zuckerman (1978) evaluated the relationship between goals and interests in later years of high school with the goals and sex-role

attitudes in the final years of college. She compared the predictive values of academic ability and interests in terms of educational and career goals in high school, and sex-role attitudes and goals in college. She studied 36 female college students who allowed her access to their ACT Interest Inventory and Achievement Test scores. Zuckerman administered to each subject a questionnaire which assessed educational goals, career goals, sex-role attitudes, as well as biographical data. The ACT test was completed several years earlier while the students were in high school. Data obtained from the ACT included expected college major and career goals, educational goals, and scholastic accomplishments in high school.

She found that goals and abilities in high school are related to one another and significantly predict goals and sex-role attitudes in college. The hypothesis that high school educational and career goals predict college educational and career goals was supported. Academic achievement as assessed by ACT achievement scores is not related to high school or college educational or career goals. These results suggest that although academic ability predicts feminist sex-role attitudes, it is the choice of challenging courses in high school and college rather than ability alone that predicts higher educational aspirations.

Rand (1968) hypothesized that career and homemaking-oriented college freshman women would differ on psychological and behavioral characteristics culturally defined as masculine or feminine with the career-oriented woman being more masculine and the homemaking-oriented more feminine. She also hypothesized that these two groups differ in

their perception of their sex-roles. The data for the study were the responses of 848 freshman college women to the American College Survey, a descriptive inventory of ideas, attitudes, and experiences. The homemaking sample were defined as the 548 freshman who felt that finding a husband in college was more important than finding a suitable field of study. The career-oriented sample were 300 women who chose MD, LLB, DDS, or PhD as their highest expected level of education and who did not feel that finding a husband in college was more important than finding a suitable field. Responses of the two groups to questions of the American College Survey were compared.

The results of Rand's study substantiate masculinity-femininity as a dimension along which career- and homemaking-oriented women differ. This career group scored higher not only on masculine characteristics but on many of the feminine characteristics as well. Rand concludes from this study that the career-oriented freshman woman deviates from the traditional feminine role and has redefined her role to include behaviors appropriate to both sexes.

Tangri (1972) explored the personal determinants of women's nonsextypical occupational choices. She studied 200 women seniors who were part of the Michigan Student Survey cohort. Using choice of occupation as stated in their senior year questionnaire, one-third of the 200 women were classified either as Role Innovators (occupations with fewer than 30% women), Moderates (occupations with 30% to 50% women in them), or Traditionals (occupations with more than 50% women).

As expected, there was a positive relationship between mother's education and daughter's Role Innovation, but it was not statistically significant. The effect of a mother's having completed a professional degree is marked, even though the degrees are in traditionally feminine areas. The best predictors of daughter's Role Innovation are whether her mother is presently employed and the innovativeness of the mother's occupation. It seems that more educated working mothers, particularly those who are in male-dominated occupations themselves, are taken as role models.

Tangri finds that the Role Innovator chooses a vocation for personal satisfaction rather than for altruistic or security oriented reasons. Most of these Role Innovators are also achievement oriented in a social comparison sense. While the Traditional woman expects to live through and for others, the Role Innovator expects to make a life for herself through her own efforts. Tangri notes that the Role Innovator's emphasis on autonomy is further strengthened by her tolerance for delayed marital gratification and later closure on choice of occupation. Innovators are more autonomous, individualistic, and motivated by internally imposed demands to perform to capacity.

Several research teams have compared homemakers and career women on the Strong Vocational Interest Blank (SVIB). This inventory has several subscales that have been found to differentiate the interests of these two groups of women. The Edwards Personal Preference Schedule (EPPS) has also been a popular instrument to assess achievement motivation. In the next study, Hoyt and Kennedy (1958) hypothesized that career-oriented and homemaking-oriented women would differ on the Housewife,

Stenographer-Secretary, Office Worker, and Elementary Teacher keys of the SVIB, with the latter group scoring higher. For the remaining scales the null hypothesis was proposed. The investigators also hypothesized that homemaking and career-oriented groups would differ on personality characteristics as measured on the 16 scales of the EPPS. Thirty freshman college women classified as career-oriented and 71 women classified as homemakers served as subjects. Significant differences were found for the SVIB scales. The career group had higher mean scores on Artist, Author, Librarian, Psychologist, Physical Education Teacher, and Physician. The homemaking group scored higher on Buyer, Housewife, Elementary Teacher, Office Worker, Stenographer-Secretary, Business Education Teacher, Home Economics Teacher, and Dietician. Lawyer and Dentist showed higher mean scores for the career group at a larger significance level.

The hypothesis that the groups would differ on personality characteristics was confirmed. On the EPPS, the career group scored significantly higher on Achievement, Intraception, and Endurance. The homemaking group scored significantly higher on Heterosexual and Succorance scales. Hoyt and Kennedy interpreted these results and suggested that career-oriented women may be motivated in that direction by a need to establish one's worth through competitive behavior (achievement), need to intellectually know and understand (intraception), a need to accomplish concrete goals (endurance), and, a need to avoid relations with the other sex (heterosexuality). The investigators suggested that homemaking oriented women may be motivated in that

direction primarily by needs for affection and acceptance (succorance), which the marriage situation can satisfy.

In a later study, Tyler (1964) examined the career and noncareer patterns of interest in high school girls using the SVIB. Out of 76 girls she formed two contrasting groups on the basis of the Strong profiles. The essential distinction between the two groups was whether or not career interests were present. Extreme groups were formed. Only 15 girls qualified for the career group and 30 girls qualified for the noncareer group. Tyler found at the eighth grade level, significant differences between the two groups of girls on the Kuder Preference Record occurring on the Outdoor scale, suggesting a greater interest in physical activity on the part of the career group than on the part of the noncareer group. At the first grade level only 11 career girls and 15 noncareer girls were studied. At this early level, the career group showed a more masculine average on the MF subscale of the Dreese-Mooney Inventory than the noncareer group. The results suggested that the career girls are interested in boys' activities at an early age, but that these early masculine interests subside as development continues.

The career group of girls averaged higher than the noncareer group in academic ability and achievement at almost all grade levels, but the differences are not statistically significant. During their junior year, 21 noncareer and 9 career girls were administered the EPPS. The career group scored significantly higher on Achievement whereas the noncareer group scored significantly higher on the need for Heterosexuality. Several trends were reported. The career group averaged

higher on Deference, Endurance, and Intraception. The noncareer group averaged higher on Change and on Succorance.

In the next study SVIB occupational scales were used to define homemaker-oriented and career-oriented groups of women. Gysbers, Johnston, and Gust (1968) were interested in the demographic and attitudinal differences between these two groups of women. Drawing from previous literature about the SVIB, the homemaker scales were defined as Housewife, Business Education Teacher, Office Worker, Elementary School Teacher, Home Economics Teacher, and Dietician. The career group criterion scales were defined as Artist, Author, Psychologist, Lawyer, and Physician. The homemaker group was composed of 52 women while the career group was composed of 29 women.

Gysbers et al. found that stable career women were more apt to be single, have pursued more education, and come from families where both parents had more education than was true for those from the stable homemaker group. The career women attach more importance to work, that is, they say it is more apt to be a primary concern as opposed to a secondary concern, and they regard achievement as more important than personal regard from others.

Another approach for the investigation of achievement motivation in women looks at the levels of the need for achievement during the various phases of the life cycle. Baruch (1967) hypothesized that the need for achievement of women is associated with their age and family situation. A woman's adult life may be divided into three phases: one before the advent of children, one when the family is the major concern, followed

by one when the family has been established. She felt that achievement declines from the level of the first phase during the second phase, but returns to earlier levels during the third phase. She also hypothesized that for those women whose families are established, high need for achievement will be associated with paid employment and return to work.

Baruch presented a series of six pictures to 137 Radcliffe alumni to assess achievement motivation. The data indicated a significant drop in need for achievement occurring between five and ten years after graduation. One expects this observed decline in need for achievement to correspond to the phase of life when home and family are the major concern and the family is getting established. Beginning with the group 15 years out of college, women may still be occupied with child rearing, but more of them became significantly preoccupied again in fantasy with achievement striving. Baruch found that married women with a high need for achievement who are 20 or more years beyond college are very likely to be found pursuing careers, whereas others with low and medium levels of need for achievement differ significantly, and are not likely to be employed.

Baruch extended her research to include 763 women representative of a national sample. Using these less select subjects, neither of the hypotheses could be supported. She found the major effect to be a decline in motivation in the groups over 55. For the women in this sample who have only a high school education or less, it appears that economic factors may be more important determinants of work status than achievement striving or personal satisfaction.

The studies that are more relevant to the present research employ as subjects mature, adult women established in their role as either housewife or career woman. These studies specify age requirements, socioeconomic class, education, and marital and family status in an attempt to make the samples as comparable as possible. These studies examine the presence of achievement motivation, their attitudes toward the female role and their relationship to the occupational status of these women. Further distinction is drawn between the women employed in the more demanding and higher status male-dominated occupations and the women employed in the more traditional female-dominated occupations.

Nagely (1971) explored the differences between women who choose traditional female careers (traditionals) and those who are employed in male-dominated occupations (pioneers). She described traditional female careers as those which have historically been considered socially acceptable occupations for women and in which the tasks are closely related to traditional homemaking and childrearing responsibilities. Those professions which have historically included few women such as law and medicine were classified as male-dominated occupations. The subjects were 20 traditional and 20 pioneer working women. All subjects were married and living with their husbands. Each woman had at least one child who was living at home. All subjects had at least a bachelors degree.

Nagely assessed female role perception, attitudes toward career and homemaking, and biographical variables. Nagely found significant differences on all three measures between the two groups. The pioneer

group seem to be more career committed than women in traditional female occupations. These women would be more likely to refuse to give up their careers if their husbands asked them to do so, and they would be more reluctant to move for their husbands' professional advancement. These women feel that their professional activities are at least as important as their husbands'. The pioneer woman also tends to find housework to be drudgery, and sees her career as more important than homemaking. They are more likely than traditionals to see their careers as satisfying, necessary, permanent, and liberating. Finally, pioneers more frequently stated that being a woman is a professional disadvantage.

Kriger (1972) investigated the differences between career women and homemaking women, and between women who enter traditionally female-dominated occupations and women who enter traditionally male-dominated occupations, with respect to two variables: perception of their parents' child-rearing attitudes and the need for achievement level. She used a total of 66 adult women, 22 in each group. All subjects were married and living with their husband and at least one child. Each subject held at least a bachelor's degree, or its equivalent. The Control scale from the Parental Attitude Research Instrument allowed a comparison of parents' child-rearing attitudes along a permissiveness-strictness continuum. The need for achievement scale from the EPPS was also administered.

The results indicated that the homemakers perceived their parents as significantly more restrictive in comparison to career women who

perceived their parents as relatively permissive. With regard to need for achievement, career women in male-dominated occupations were most achievement motivated, career women in traditional or female-dominated occupations were second, and homemakers were least achievement motivated among the three groups.

Kriger notes that a girl who perceives her parents as controlling, restrictive, and overprotective is likely to make a decision to become a homemaker, where her needs for nurturance and love are likely to be met. On the other hand, a girl who perceives her parents as permissive and accepting is likely to decide in favor of a career, where her needs to develop herself as an individual are likely to be satisfied. Kriger contends that the main vocational choice for women is between "working" and "not working," that is, between homemaking and a career, rather than a choice among a variety of occupational areas. She also finds that need for achievement is directly related to vocational choice with regard to choice between homemaking and a career, and also to a vocational choice within a career. A successful entry into a male-dominated occupation would require a high degree of motivation to achieve, more so than entering a traditional career, and even more so than becoming a homemaker.

In summary, research studies examining achievement motivation in women were at first modelled after previous experiments involving male subjects. When the resultant data yielded confusing and conflicting results, achievement motivation was thought to involve different and perhaps complex factors as compared to achievement motivation in men.

The socialization experiences of male and female children and the expectation of adherence to sex-appropriate behaviors seems to account for the less noticeable achievement strivings of women, as compared to men. However, with the changes in modern society, including technological advances, effective contraceptive methods, and longer life span, women are becoming aware of the nontraditional employment, career and lifestyle options available to them. As women begin to occupy employment positions in the male work world, thus acquiring status, power, and money, their achievement strivings and success will become more obvious.

CHAPTER III

PURPOSE OF THE STUDY

The present study examines the relationships among sex-role orientation, achievement behavior, the extent of Type A behavior pattern and blood pressure in groups of women. Women were used as participants to help develop an understanding of their characteristics pertaining to these variables. The majority of previous research in these areas has employed men as subjects, and the conclusions drawn from these studies cannot be generalized to the female population. The women in this study were drawn from four occupational categories: (1) housewives, (2) women employed in medium status female-dominated occupations, (3) women employed in high status female-dominated occupations, and (4) women employed in high status male-dominated occupations. The division by occupational status provided specific groups of women in order to verify specific associations between employment status and sex-role orientation, achievement behavior, the extent of Type A behavior pattern and blood pressure.

The first hypothesis proposes that women who prefer to stay at home view their appropriate sex role as traditional in nature. In this orientation, the husband is supposed to support the wife and children, while the wife takes care of the house and family. The division of labor and status of the wife are different in families with working wives/mothers. In comparison, working women have redefined their sex role to include behaviors previously considered appropriate only for

males such as career-striving and employment in the work sphere. Thus, it was expected that housewives would endorse a traditional sex role in comparison to employed women who would endorse a nontraditional sex role. The sex-role orientation of each participant was determined from the Brogan and Kutner Sex-Role Orientation scale which classified the individual along a continuum from traditional to nontraditional.

The employed women and homemaking women may not only differ in terms of sex-role orientation, but also in the personality traits they ascribe to themselves. The housewives are likely to describe themselves as fitting the traditional female role. They probably describe themselves as exhibiting more "feminine" traits and fewer "masculine" traits when compared to the employed women. The working women appear to have adopted some "masculine" traits in addition to the "feminine" traits. The extent to which the participants are feminine, masculine, androgynous, or undifferentiated in sex-role was determined by Bem's Sex-Role Inventory. In this test the participants rated how well each of 20 masculine and 20 feminine personality characteristics describe themselves. The individual is classified as feminine when her endorsement of feminine characteristics is above the median split (based on a normative sample) and her endorsement of masculine characteristics is below the median. The androgynous sex-role represents the endorsement of both masculine and feminine attributes above the median split. The individual is classified as masculine when her endorsement of masculine characteristics is above the median and her endorsement of feminine characteristics is below the median. Thus, the housewife population is

expected to appear more feminine in sex-role than the employed women, who in turn, may appear androgynous or masculine in sex-role.

Other factors examined were Type A behavior and blood pressure. Mortality due to heart attacks, strokes, and heart disease is the primary cause of death in the United States. The literature agrees that Type A behavior is an important risk factor for CHD. Type A behavior, characterized by competitiveness, impatience, aggressiveness, and time-urgent behavior, is reinforced and encouraged in the work environment. That is, the more one produces the more likely he/she is to receive promotions, raises, and other rewards for his/her effortful striving. Women are now entering the work force in ever increasing numbers. As they encounter more job responsibility, deadlines, and interpersonal stress at work, it is likely that their Type A behavior will be enhanced. Thus, the stresses of the work environment combined with the manifestation of the coronary-prone behavior pattern may increase one's blood pressure and risk of CHD. Entrance into a traditionally male-dominated occupation, such as medicine or law, would require even more aggressiveness, competitiveness, and ambition than entrance into a traditionally female-dominated position, such as nursing or teaching nursing on the college level.

It was expected that women in male-dominated occupations would exhibit a more extreme manifestation of the Type A coronary-prone behavior pattern than the women in female-dominated occupations, who would exhibit a more extreme manifestation of the Type A behavior pattern than the housewife population. Type A behavior was assessed by

Rosenman and Friedman's Structured Interview, a 10 minute tape recorded interview during which the interviewer tried to elicit Type A behavior from the subject. A paper and pencil, self-report measure, the Jenkins Activity Survey, was also employed to classify each individual according to the extremity of her behavior pattern. It was also expected that the employed women would have higher blood pressure than the housewife population.

The work environment provides a medium for competitive and achievement-oriented strivings that typify the Type A individual. Recognition for achievement behaviors is more likely to occur in the work sphere where status, power, and money can be gained. It is thought that Type A women are more likely to seek employment and less likely to leave their jobs once they have begun working. Since employment involves personal risks, such as possible failure and rejection, it appears that women who seek employment are more competitive and ambitious, with a greater need for achievement, than homemaking oriented women. It was expected that women employed in high status occupations would display a greater achievement orientation than the women employed in medium status occupations, who would exhibit a greater achievement orientation than the housewife population, as evidenced by their responses to Veroff, McClelland, and Marquis's (1971, cited in Veroff, McClelland, & Ruhland, 1975) "assertive competence motivation" questionnaire.

A woman has a choice of either working outside of the home, or becoming a housewife. She may value achievements for herself that are

not work-oriented. These achievements may be related to home, affiliation and family activities. The housewife population may express achievement strivings in a manner consistent with the traditional female sex role. In an attempt to discern the kind of personal achievements that are valued by women, the participants completed the author's Personal Accomplishments Survey. This questionnaire asked each individual to list her most important personal achievements. The results were largely descriptive of achievement behavior characteristics pertaining to the four occupational categories of women.

This study contributes to the existing literature by comparing several variables at one time. In this way, prominent relationships between the factors were noted. While the association between Type A and achievement, and the association between sex-role orientation and achievement have both been examined in previous studies, this study investigated all three variables at the same time. The inclusion of four different occupational categories made possible finer distinctions of these factors.

Specifically, the following six hypotheses were proposed:

1. Employed women are less traditional in sex-role orientation than housewives.

2. Housewives are more feminine in sex role than employed women, who are more masculine or androgynous in sex role.

3. Employed women report more personal accomplishments indicative of achievement behavior that are career-related as compared to the housewife population, who report more achievements related to home, affiliation and family activities.

4. High status employed women display more assertive competence motivation than the medium status employed women, who exhibit more assertive competence motivation than housewives.

5. Women in male-dominated occupations exhibit a more extreme manifestation of the Type A coronary-prone behavior pattern than women in female-dominated occupations, who exhibit a more extreme manifestation of the Type A behavior pattern than the housewife population.

6. Employed women have higher blood pressure than housewives.

CHAPTER IV

METHODS AND PROCEDURES

Design

In a correlational study, sex-role orientation, achievement behavior, Type A behavior pattern, and blood pressure were examined in four occupational groups of women (housewives, women employed in medium-status female-dominated occupations, women employed in high status female-dominated occupations, and women employed in high status male-dominated occupations). Sex-role orientation was determined by Brogan and Kutner's Sex-Role Orientation Scale and Bem's Sex-Role Inventory. Achievement behavior was assessed by the author's Personal Accomplishments Survey and Veroff, McClelland, and Marquis's Assertive Competence Motivation Questionnaire. Type A behavior pattern was assessed by the Rosenman and Friedman Structured Interview and the Jenkins Activity Survey.

Participants

Participants were 80 white women between the ages of 30 and 45. All participants had at least a college degree or its equivalent. Twenty participants were recruited from the Bellaire Women's Civic Club, Houston League of Women Voters and the American Association of University Women for the housewife population. The medium status female-dominated occupational group (N = 20) was selected from nurses working in the Houston area. All of the women in the high status female-dominated occupations (N = 20) were nursing professors teaching

at universities in Houston. And, the women in high status male-dominated occupations (N = 20) were physicians and lawyers practicing in the Houston area.

The occupational categories were selected in accordance with Featherman and Stevens' (1982) revised socioeconomic index of occupational status. This index is a revision of Duncan's (1961) socioeconomic status scale. Featherman and Stevens have rated various occupations from 0 to 100 according to their occupational prestige. Refer to Appendix A for the relevant listing of occupations, their occupational prestige, and the percent of women employed in each occupation.

Procedure

Participants were recruited for the housewife population by first acquiring lists of club members. Then each member was telephoned and asked to participate. Nurses in a large medical center complex were mailed letters asking for their participation. Follow-up telephone calls were routinely made. Nursing professors were solicited from two universities in Houston. The professors were also mailed requests for participation followed by telephone inquiries. A list of prospective lawyers was acquired from the Houston Women Lawyers Association. Names of physicians and lawyers were also selected from the telephone book. Physicians were predominantly located in the medical center complex. These doctors and lawyers were sent letters requesting their participation. Follow-up telephone inquiries were made to set up an appointment time for the tape-recorded interview.

Each participant was told that this was a study of "Quality of life in various occupational groups." The participants were interviewed by the researcher at the subjects' home or place of work. First, the participant's blood pressure was recorded. Then, background information as recorded on the Background Information Sheet was obtained. Next, the Structured Interview was administered by the researcher. Finally, a packet including the five self-report questionnaires was given to the women, to be mailed back to the researcher next week. These five tests were presented in a randomized order to prevent an effect from order of presentation.

Test Instruments

Sex-Role Orientation

Sex-role orientation as determined from the Brogan and Kutner Sex-Role Orientation scale (SRO) classified the individual as either traditional or nontraditional. Sex-role orientation was conceptualized as a continuum ranging from traditional to nontraditional including beliefs about appropriate behavior for both sexes. The questionnaire addressed the following content areas: attitudes toward the traditional sex-based division of labor in marriage, attitudes toward traditional and nontraditional employment of men and women, attitudes toward traditional and nontraditional political status of women, attitudes toward appropriate sex-role socialization of male and female children, and attitudes toward existing stereotypes of appropriate behavior not covered by the above areas such as standards of dress, etc. Thirty-six

Likert-type items were used. Twenty of the items were phrased in a traditional way while the remaining 16 were phrased in a nontraditional way. A subject's total score was the sum of the numerical value of responses to all 36 items, thus total scores could range from 36 to 216. The lower the total score, the more traditional the subject's sex-role orientation; the higher the total score, the more nontraditional the subject's SRO. Split-half reliability coefficient = .95. Refer to Appendix B for a sample questionnaire.

Bem's Sex-Role Inventory (BSRI) classified the individual as either feminine, masculine, androgynous, or undifferentiated in sex-role. The inventory included a Masculinity scale (20 items), a Femininity scale (20 items), and a Social Desirability scale (20 neutral-sex items). Specifically, the BSRI asked the participant to indicate on a 7-point Likert-type scale how well each of the 60 characteristics described herself. As part of the standardized scoring procedure, each subject's Femininity and Masculinity scores were computed in order to classify individuals into one of the four sex-role groups. Utilizing the medians of the normative sample as a dividing point (Bem, 1981), subjects high on femininity and low on masculinity were classified as feminine, subjects high on masculinity and low on femininity were classified as masculine, subjects low on both dimensions were classified as undifferentiated, and subjects high on both dimensions were classified as androgynous.

In order to estimate the internal consistency of the BSRI, coefficient alpha was computed separately for males and females who

completed the inventory in 1973 and 1978. The Femininity score, the Masculinity score, and the Femininity-minus-Masculinity score yielded reliable coefficients ranging from $\alpha = .75$ to $\alpha = .87$. Test-retest reliability over a four-week period for the component scores is highly reliable ranging from $\underline{r} = .76$ to $\underline{r} = .94$. Refer to Appendix C for a sample questionnaire.

Achievement Behavior

Achievement behavior was assessed from the author's Personal Accomplishments Survey (PAS). The participants listed their five most important achievements (1) for the past one year, (2) for the time period from their college years to the present time period, and (3) during their whole lifetime (for a total of 15 responses). These accomplishments were ranked from one to five according to personal importance during each of three time periods. Thus, the responses have a rank order weighting. Frequency tallies for each occupational group of women were obtained. The responses were sorted into 23 categories. The categories were then grouped into larger clusters: career related achievements, family-affiliation achievements, individual growth and development achievement and an "other" cluster. The categories in the "other" cluster were examined individually because these items were not related in terms of achievement style. Refer to Appendix D for a sample questionnaire and descriptive categories for accomplishments. The results were largely descriptive of achievement behavior characteristics pertaining to the four occupational groups of women.

Achievement orientation was assessed by the objective questionnaire employed by Veroff, McClelland, and Marquis (1971, as cited in Veroff, McClelland, and Ruhland, 1975). "Assertive competence motivation" was specifically assessed with this questionnaire. This questionnaire was administered to a cross section of black and white, male and female adults, aged 18-49 ($N = 365$). The questionnaire was part of a larger battery measuring intelligence and achievement orientation. The 16 questions included in this questionnaire comprise Factor 1, assertive competence motivation. Assertive competence motivation reflects a higher interest in autonomy or power than in affiliative interests, and represents a positive interest in competence. Assertive competence motivation seems to stem from the desire to see oneself as successfully performing valued achievement activity in society. Assertive competence depends on some aspects of competition in reference to broad normative standards rather than on an immediate reference group, that is, doing well vis-à-vis the whole society.

In the 1971 study the differences in Factor I scores were significant between males and females ($p < .01$). The fact that women are lower than men in assertive competence motivation is congruent with the common stereotype that women are less interested than men in performance that requires assertiveness via power, autonomy, and achievement, especially at the cost of affiliation or acceptance by others. This factor was also found to be a strong predictor of education for both men and women even when social status background was controlled.

This instrument included two individual items (positive social comparison and realistic social comparison), and three scales constructed a priori on a theoretical basis and then empirically verified for internal consistency (autonomy-power scale, mastery scale, and personal efficacy scale). The format was a series of two- or three-alternative forced choice questions. A low score indicated low assertive competence motivation and a high score represented high assertive competence motivation. Refer to Appendix E for a sample questionnaire.

Type A Behavior

Type A behavior was assessed by the Structured Interview (SI) and the Jenkins Activity Survey (JAS). The SI classified the individual on a dimension of coronary proneness from most coronary prone (A1, A2, B3, B4) to least coronary prone. Rosenman and Friedman (Rosenman, Friedman, Straus, Wurm, Kositchech, Haun, & Werthessen, 1964) described the 22 question interview during which the trained interviewer attempts to elicit Type A behavior in the subject. The questions were designed to elicit from the subject the degree of drive and ambition, past and present competitive, aggressive, and hostile feelings, and the degree and intensity of time urgency. The interviewer rated the subject on loud and explosive speech, rapid and accelerated speech, response latency, hostility and competition and control for the interview. The content of the answers to the questions was useful, but the behavioral assessment was based far more on the manner in which the subject responded. The interview was tape recorded so that the content and vocal stylistics could be assessed at a later date by two trained

raters. Interrater agreement classifying the participants as either Type A or Type B was 89%. The more experienced rater determined the disputed agreements. From the SI the subject was classified either as A1, A2, or B (the relative absence of Type A characteristics). In the Western Collaborative Group Study (WCGS), subjects showed an 80% similar categorical assessment with the SI over a period of 12 to 20 months (Jenkins, Rosenman, & Friedman, 1965). These researchers also report 84% interrater agreement on a group of WCGS interview assessments. Refer to Appendix F for the questions composing the SI.

Type A behavior was also measured by the JAS (Jenkins, Friedman, & Rosenman, 1967). This is a paper and pencil self-report test with 61 multiple choice questions. The JAS is based on the conceptual formation of the coronary prone behavior pattern, Type A, as developed by Friedman and Rosenman since 1959. Psychological and epidemiologic methods were used to develop the test questionnaire and to study its properties in populations. The JAS provided a numerical score for the global behavioral assessment rating (Type A). Component clusters of the behavior pattern such as (1) Speed-Impatience, (2) Job Involvement, and (3) Hard-Driving were also scored. The first component, Speed-Impatience, deals with the time urgency and threshold for irritability revealed in the style of behavior of the Type A person. The second component, Job Involvement, expresses the degree of the demands of and dedication to occupational activity. The third component involves perceptions of oneself as being hard-driving, competitive and serious. From the JAS the individual was given a numerical value along a

continuum. The cut-off points for behavior pattern were set by the researcher. Persons scoring ≥+5.0 were classified as Type A while persons scoring ≤-5.0 were classified as Type B. Those individuals scoring <+5.0 and >-5.0 were classified as Type X. To assess how accurately the JAS classifies individuals from the WCGS, Jenkins, Rosenman, and Friedman (1967) compared the ratings made on the basis of the JAS with the ratings made from the SI at intake in 1960 and in the 1962 interviews. The researchers found an over-all rate of agreement of 72.4% between the JAS and the SI. The one year test-retest correlations have been observed in the range of .60 to .70. Refer to Appendix G for a list of the JAS questions.

Blood Pressure

Blood pressure was assessed prior to obtaining background information. The respondent's systolic and fifth phase diastolic blood pressure was measured. No women were currently taking antihypertensive medication.

Background Information

Background information was obtained on the Background Information Sheet pertaining to the participant's age, occupation, education, number of children, hours worked per week, hours spent in volunteer or club activities each week, spouse's education and occupation, mother's education and occupation before retirement, and father's education and occupation before retirement. Each woman was also asked, "Are you presently working as a (woman's occupation) mainly by choice, out of

necessity or for both reasons." See Appendix H for a copy of the Background Information Sheet.

Quantification of Data

Demographic data obtained from the Background Information Sheet was examined for differences between the four occupational groups of women (high status male-dominated, high status female-dominated, medium status female-dominated, housewives). Univariate ANOVAs were performed on the following variables: hours worked per week, participant's age, number of children, husband's occupation, and father's occupation. Kruskal-Wallis one-way ANOVAs examined participant's education, hours of volunteer activities per week, and husband's, father's and mother's education. Variables such as marital status, mother's occupation and whether working by "choice, necessity or both" were analyzed in contingency tables.

Various statistical tests were performed to examine differences between the four occupational categories of women. For the first hypothesis the employed women were compared to the unemployed women by scores derived from Brogan and Kutner's Sex-Role Orientation scale. Data ranging from 126 to 215 were inserted into a univariate ANOVA. The lower scores represented a more traditional sex-role orientation while the higher scores represented a more nontraditional sex-role orientation.

Next, employed women were compared to the unemployed women on sex-role classification obtained from Bem's Sex-Role Inventory. The participants classified as feminine in sex-role were compared to the participants classified as masculine and/or androgynous. Thus the

second hypothesis was tested in a 2 × 2 contingency table with employment status and sex-role as variables. The mean masculinity and femininity scores were also computed for the employed group and for the unemployed group. The groups were then compared for differences in sex-role classification using two-tailed *t*-test procedures.

Several tests were employed to compare the employed women to the unemployed women by achievements listed on the PAS. In order to test the third hypothesis the achievements listed on the PAS were assigned to 23 categories and then divided into four cluster groupings. The achievements were compared in terms of frequency and weighting of response categories for each of the three time periods listed on the questionnaire. Each achievement was weighted from 1 (less importance) to 5 (more importance). Thus both the frequency and weighting of an achievement contributed to the total scores. Wilcoxon one-way ANOVAs compared the employed women to the housewives for differences in reported career achievements and family-affiliation achievements listed for the "past year," "college to present" and "whole life" time periods. Next, Wilcoxon Signed-Ranks tests compared career achievements to family-affiliation achievements for the employed women and then for the housewife group. Finally, Kruskal-Wallis one-way ANOVAs compared the four occupational groups on achievements listed for each of the three time periods. In each time period the achievements were examined by clusters (career achievements, family-affiliation achievements, individual growth and development, "other" achievements). The "other" cluster was further divided by category (competitive activities/hobbies, financial purchase, community service, vacationing, geographical move).

The data from the Assertive Competence Motivation questionnaire were inserted into the next ANOVA to test the fourth hypothesis. The high status employed women were compared to the medium status employed women who were in turn compared to the housewife population. Obtained scores ranged from 10 to 26. A low score indicated low assertive competence motivation and a high score represented high assertive competence motivation.

For the fifth hypothesis the male-dominated employed women were compared to the female dominated employed women, who were in turn compared to the housewife population for manifestation of Type A behavior pattern. The JAS scores for Type A, Speed and Impatience, Job Involvement, and Hard-Driving and Competitive components were entered into a multivariate ANOVA. Each component was also examined by a separate univariate ANOVA to test for significant differences between the categories of women. The other Type A measure, the Structured Interview, classified participants as either Type A1, A2 or B. The classifications of either A or B were examined in 2 × 2 contingency tables comparing male-dominated to female-dominated employed women and then female-dominated employed women to housewives.

The sixth hypothesis compared employed women to unemployed women for differences in systolic and diastolic blood pressure. A univariate ANOVA was performed for each of the variables.

A correlation matrix was also computed. Only quantitative variables were examined thus excluding categorical variables (marital status, whether working by "choice, necessity or both," mother's

occupation and Structured Interview). Background information variables included in the matrix were participant's age, hours worked per week, participant's education, number of children, hours of volunteer work per week, husband's occupation and education, mother's education, and father's occupation and education. Questionnaire data included in the matrix were Brogan and Kutner's Sex-Role Orientation scale, Bem's Sex-Role Inventory (Masculinity and Feminity dimensions), Assertive Competence Motivation test, JAS Type A score, JAS Speed and Impatience score, JAS Job Involvement score, JAS Hard-Driving score, and systolic and diastolic blood pressure readings. Correlations with $p < .06$ were then plotted as scattergrams for interpretive purposes.

The participants were also grouped according to Type A behavior pattern as determined by the SI. Thus, Types A1, A2, and B were compared for differences on the Background Information variables and the questionnaire scores. Next, the participants were grouped according to JAS Type A scores. Women obtaining JAS Type A scores $\geq +5.0$ were classified as Type A while women scoring ≤ -5.0 were classified as Type B. Individuals scoring $<+5.0$ and >-5.0 (the middle third of the scoring range) were classified as Type X. These three groups were examined for differences on the Background Information variables, the questionnaire scores and behavior pattern classification determined by the SI.

CHAPTER V

RESULTS

This chapter examines the background information data before presenting the data pertaining to the six hypotheses. No specific hypotheses were formulated for the background information variables. However, age, marital status and socioeconomic status were expected to be comparable for the total sample so that differences on the other background information variables, sex role, achievement and Type A measures would not in part be attributed to differences in group comparison.

The background information variables and the other test measures were examined for differences between the four occupational categories: (1) physicians/lawyers, (2) nursing professors, (3) nurses and (4) housewives. The measures of sex-role achievement, Type A and blood pressure were then examined to test the six hypotheses. The chapter concludes with an examination of additional tests performed including a correlation matrix and further groupings according to Structured Interview and Jenkins Activity Survey behavior pattern classification.

Background Information

Data such as marital status, participant's age and number of children are presented in Table 1. Marital status is represented by the percentage of women currently married in each occupational category. Group means for age and number of children are also given in Table 1.

Table 1

Marital Status, Age and Number of Children
by Occupational Category

Variable	Physicians/ lawyers		Nursing professors		Nurses		Housewives	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Marital status[ab]**	70		85		60		100	
Age	35.5	4.4	38.2	4.8	37.4	4.5	35.9	2.8
Number of children***	1.3	1.5	2.1	1.4	.6	.9	2.0	.7
Number of children for married individuals*	1.9		2.2		1.0		2.0	

[a]Percentage married in each occupation.

[b]Groups significantly different at *$p < .05$
**$p < .01$
***$p < .001$.

Because of the differences in marital status, number of children for married individuals was also calculated. Refer to Table 1 for means, standard deviations and percentages of these personal data listed according to occupational category.

Contingency tables with occupational group as one variable examined the participant's marital status. Significant differences in marital status were further analyzed in pairwise comparisons of occupational categories. Analysis of variance compared the four occupational categories on participant's age, number of children and number of children for married individuals only. Pairwise comparisons with Tukey values were made for variables that reached statistical significance. Chi-square and probability values for marital status are shown in Table I-1, Appendix I. Refer to Table I-2, Appendix I for ANOVA summary tables and Table I-3, Appendix I for summary tables of pairwise comparisons and Tukey values.

There were no significant differences in age between the four groups. The women ranged in age between 30 and 45 years old. This age sample is more mature in terms of life cycle than college women examined in previous studies of sex-role orientation, achievement behavior and Type A coronary-prone behavior pattern. The women are involved in raising children and/or have established themselves in careers.

Marital status was significantly different among the four occupational groups, χ^2 (3) = 10.98, $p < .01$. As you can see in Table 1, all of the housewives were married. This finding makes sense because a woman would have to have a source of financial support in

order to remain at home. Only 60% of the nurses, 70% of the physicians/lawyers and 85% of the nursing professors were currently married. Follow-up tests demonstrated that the marital status of the housewives was significantly different from the marital status of both the nurses, χ^2 (1) = 10.00, $p < .002$, and physicians/lawyers, χ^2 (1) = 7.06, $p < .008$.

For the total sample number of children compared by occupational category was significantly different, F (3,76) = 6.93, $p < .0004$. The women reported between zero and six children per family. Refer to Table 1 for the mean number of children for each group. Pairwise comparisons revealed that the nurses had fewer children than either the housewives (Tukey value $p < .01$) or the nursing professors (Tukey value $p < .01$). Due to group differences in marital status, mean number of children was figured for married women only. Again the groups were significantly different, F (3,59) = 3.06, $p < .03$. Pairwise comparisons indicated that the nurses had fewer children than the nursing professors (Tukey value $p < .05$).

Participant's occupational status, years of education, whether working by "choice, necessity or both," hours worked per week and hours per week spent in volunteer activities are presented in Table 2. Occupational status scores were obtained from a revised socioeconomic index of occupational status presented by Featherman and Stevens (1982). The occupations were rated from 0 (less occupational prestige) to 100 (more occupational prestige). However, the occupation of "housewife" was not included in this index. Education level is represented by years

Table 2

Occupational Status, Years of Education, Why Working, Hours Worked and Hours Volunteer Work by Occupational Category

Variable	Physicians/ lawyers		Nursing professors		Nurses		Housewives	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Occupational status[a]	87.14/86.96		86.63		46.62			
Years of education[b]	20.0	.0	18.5	.7	16.2	1.0	16.1	1.2
Working by:[bc]								
Choice	75		60		25		95	
Necessity	15		5		25		5	
Both	10		35		50		0	
Hours worked per week	53.3	11.4	51.4	8.6	46.5	8.3		
Hours volunteer work per week[b]	2.6	2.6	2.3	1.9	3.4	4.4	10.8	18.6

[a]Occupational status derived from Featherman and Stevens (1982).

[b]Groups significantly different at $p < .001$.

[c]Percentage of each occupation working by choice, necessity or for both reasons.

of school completed. The percentages of women working by "choice, out of necessity or for both reasons" are presented for each occupational category. Hours worked per week for the employed women and hours per week spent in volunteer activities for all of the women are presented in Table 2. Refer to Table 2 for means, standard deviations and percentages of these vocational variables listed by occupational category.

Kruskal-Wallis one-way ANOVAs examined participant's education and hours spent in volunteer activities each week. Distribution-free multiple comparisons were performed on variables that reached statistical significance. Contingency tables with occupational group as one variable examined whether a woman was working by "choice, out of necessity or for both reasons." Analysis of variance compared the three employed groups on hours worked per week. The Kruskal-Wallis one-way ANOVA summary data for participant's education and hours spent in volunteer activities are shown in Table I-4, Appendix I. Distribution-free multiple comparisons based on Kruskal-Wallis rank sums are shown in Table I-5, Appendix I. The chi-square and probability values for why a woman is working are shown in Table I-1, Appendix I. Refer to Table I-2, Appendix I for the ANOVA summary table pertaining to hours worked per week.

The four occupational categories were chosen to represent male and female dominated occupations varying by high or medium occupational status. Observation of Table 2 reveals that the four occupational categories differed in terms of occupational prestige with physicians/ lawyers and nursing professors having more occupational prestige than

the nurses as rated on Featherman and Stevens' socioeconomic index. No statistical tests were employed to compare the occupational status of each group. The two high status occupations are representative of male- and female-dominated occupations while the nurse occupation represents a medium status female-dominated occupation. The housewife group is representative of an unemployed, female-dominated occupation.

Years of education differed significantly between the four groups, χ^2 (1) = 65.55, $p < .001$. Refer to Table 2 for the means for each occupational category. The physicians/lawyers had four years of graduate school with follow-up tests demonstrating that this male-dominated occupation had significantly more years of education than the high status female-dominated occupation ($p < .05$), medium status female-dominated occupation ($p < .01$) and housewives ($p < .01$). The nursing professors had over two years of graduate school and this high status female-dominated occupation had significantly more years of education than either the medium status female-dominated occupation ($p < .01$) or housewives ($p < .01$) who both had four years of college.

The four groups also differed significantly in their responses to "Are you presently working mainly by choice, out of necessity or for both reasons?," χ^2 (6) = 25.83, $p < .0002$. Refer to Table 2 for the percentages of responses given by each occupational category. Follow-up tests indicated that the nurses gave significantly different reasons for being in their present line of work compared to the housewives, χ^2 (2) = 20.83, $p < .0001$; nursing professors, χ^2 (2) = 6.08, $p < .05$; and, physicians/lawyers, χ^2 (2) = 10.83, $p < .004$. Also, more of the

housewives were working by choice compared to the nursing professors, χ^2 (2) = 8.58, $p < .01$. All but one housewife said she was a full-time housewife by choice. Three-fourths of the physicians/lawyers and almost two-thirds of the nursing professors were working by choice. These three occupations seemed more satisfied with their work routines than the nurses. Only one-fourth of the nurses were working by choice, one-fourth out of necessity (usually for financial reasons) and half for both reasons. Forty percent of the nurses were not married and were self-supportive. This may in part account for their working largely for financial reasons.

In Table 2 are the means for hours worked per week and hours per week spent in volunteer activities. The employed groups did not differ in hours worked per week and appeared to work well over the expected 40 hour work week. The women differed significantly in time spent in volunteer activities, χ^2 (1) = 11.63, $p < .009$. Follow-up tests indicated that the housewives devoted more hours per week to community service, PTA, political activities, Junior League and other women's clubs than each of the other occupations ($p < .05$). Housewives spent three times as much time as the medium status occupation and four times as much time as the high status occupations in these non-work activities.

The sample was expected to be homogenous in socioeconomic background. Socioeconomic factors such as parent's and husband's education and occupation are presented in Table 3. Education level is represented by years of school completed. Husband's and father's

Table 3

Husband's, Father's and Mother's Education and Occupation by Occupational Category

Variable	Physicians/ lawyers		Nursing professors		Nurses		Housewives	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Education[a]								
Husband[b]	18.9	1.7	16.9	2.0	17.1	1.7	17.6	1.9
Father	15.5	3.5	13.8	3.9	13.0	4.3	14.9	4.0
Mother	13.2	1.7	13.6	2.7	13.1	1.9	14.1	2.4
Occupation								
Husband[c]	77.1	12.0	66.8	13.3	69.0	14.8	73.1	15.7
Father[c]	50.2	24.9	48.2	23.4	53.2	21.7	57.7	24.3
Mother:[d]								
Always housewife	60		45		50		60	
Housewife then worker (lower status)	20		30		25		10	
Housewife then worker (higher status)	5		0		5		0	
Always fulltime worker	15		15		10		10	

[a] Years of education.

[b] Groups significantly different at $p < .05$.

[c] Occupational status derived from Featherman and Stevens (1982).

[d] Percentage of mother's activity for each occupation.

occupations were rated from 0 (less occupational prestige) to 100 (more occupational prestige) according to Featherman and Stevens' revised socioeconomic index. For each occupational category mother's occupation is shown by the percentage of mothers who were always housewives, who were housewives then went to work in lower status occupations, who were housewives then went to work in higher status occupations and who were always employed full-time. Refer to Table 3 for the means and standard deviations of parent's and husband's years of education, father's and husband's occupational status, and for the percentages pertaining to mother's occupational status listed according to participant's occupational category.

Kruskal-Wallis one-way ANOVAs examined husband's, father's and mother's education. Distribution-free multiple comparisons were performed on variables that reached statistical significance. Analysis of variance compared the four occupational categories on husband's occupation and father's occupation. Pairwise comparisons with Tukey values were made for variables that reached statistical significance. A contingency table with occupational group as one variable examined mother's occupation. Summary data from the Kruskal-Wallis ANOVAs of the education variables are shown in Table I-4, Appendix I. Distribution-free multiple comparisons based on Kruskal-Wallis rank sums for education compared by occupational category may be found in Table I-5, Appendix I. Refer to Table I-1, Appendix I for chi-square and probability values for mother's occupation.

The women were similar in terms of socioeconomic status as determined by parent's education and husband's and parent's occupational

status. Addressing first the husband variables, participant's husbands differed in years of education, χ^2 (1) = 8.89, $p < .03$. Distribution-free multiple comparisons demonstrated that husbands of physicians/lawyers had significantly more education than husbands of the nursing professors ($p < .05$) and nurses ($p < .01$). The husbands of physicians/lawyers had almost three years of graduate school compared to the husbands of nursing professors who had less than one year of graduate school. The husbands of women in the other occupational categories had over one year but less than two years of graduate school. Refer to Table 3 for the means years of education for each occupational category. Differences in husband's occupational status were nonsignificant. Husband's occupations near the sample mean of 71.4 include career army or air force lieutenant colonel, personnel management, quality control engineer, administrator of medical clinic, and presidential and vice-presidential positions in utility company, banking and produce industries.

Differences were nonsignificant for father's education and occupational status. These group means are presented in Table 3. The participant's fathers had a little over two years of college. The sample mean for father's occupation status was 52.4. Occupations near this rating include building inspector, retail buyer, service representative, and plant, department store and office managerial positions.

The groups did not differ on mother's education and occupational status. The women had mothers with about two years of college

education, over half of whom were always full-time housewives. One-third of the mothers were housewives who returned to the work force while the participants were still living at home. Most of these women worked as a school cook, laundress, beautician, salesperson, nurse, secretary, bookkeeper, elementary school teacher or librarian supervisor, all of which are female-dominated occupations. Only ten mothers pursued full-time careers while their daughters were still living at home. These career oriented women worked as secretaries, nurses and bookkeepers. Only one career oriented mother worked as an accountant and another mother worked as a real estate broker. Refer to Table 3 for the means and percentages listed by occupational category.

Sex-Role Orientation

Sex-role orientation was measured by Brogan and Kutner's Sex-Role Orientation (SRO) scale and Bem's Sex-Role Inventory (BSRI). Means and standard deviations for each occupational category from Brogan and Kutner's SRO scale are presented in Table 4. The obtained scores ranged from 126 to 215. The higher scores represent a nontraditional orientation while lower scores represent a traditional orientation.

Analysis of variance compared the four occupational categories on Brogan and Kutner's SRO scale. Next, *t*-tests compared employed women to unemployed women for differences in sex-role orientation. The ANOVA summary table is shown in Table J-1, Appendix J. The *t*-test summary data may be found in Table J-2, Appendix J. Comparisons of the four occupational categories did not yield any significant differences.

Table 4

Means and Standard Deviations of Brogan and Kutner's SRO by Employment Status

Occupational category	N	Mean	Standard deviation
Physicians/lawyers	20	193.0	15.6
Nursing professors	20	199.3	14.1
Nurses	20	194.0	13.1
Unemployed housewives	20	187.4	20.8
Employed women	60	195.5	14.3

Similarly, when the employed women were compared to the unemployed housewives the differences were nonsignificant. The means of these SRO comparisons are also presented in Table 4.

Turning next to the Bem Sex-Role Inventory data, the Masculinity and Femininity t-scores, means, standard deviations and sex-role classifications are presented by occupational category in Table 5. The medians of the normative sample were used as a dividing point to determine sex-role classification. A Femininity score ≥4.91 was considered high while scores <4.90 were considered low. A Masculinity score ≥4.96 was considered high while scores <4.95 were considered low. Thus, subjects high on femininity and low on masculinity were classified as feminine, subjects high on masculinity and low on femininity were classified as masculine, subjects low on both dimensions were classified as undifferentiated, and subjects high on both dimensions were classified as androgynous.

In Table 6 the Masculinity and Femininity scores are presented according to employment status. One observes that employed women are classified as androgynous while the unemployed women are classified as undifferentiated.

Analysis of variance compared the four occupational categories on the Bem Masculinity and Femininity dimensions. Next, t-tests compared employed women to unemployed women for differences on the Masculinity and Femininity dimensions. The ANOVA summary table is shown in Table J-1, Appendix J. The t-test summary data may be found in Table J-2, Appendix J.

Table 5

Masculinity and Femininity Scores from Bem's Sex-Role Inventory
by Occupational Category

BSRI	Physicians/ lawyers	Nursing professors	Nurses	Housewives
Femininity				
T-score	52	54	54	51
Mean	4.94	5.05	5.05	4.90
S.D.	.53	.31	.53	.49
Masculinity				
T-score	54	52	51	47
Mean	5.19	5.10	5.07	4.75
S.D.	.68	.66	.66	.58
Classification	Androgynous	Androgynous	Androgynous	Undifferentiated

Table 6

Masculinity and Femininity Scores from Bem's Sex-Role Inventory by Employment Status

BSRI	Employed	Unemployed
Femininity		
T-score	53	51
Mean	5.02	4.90
S.D.	.46	.49
Masculinity		
T-score	52	47
Mean	5.12	4.75
S.D.	.66	.58
Classification	Androgynous	Undifferentiated

Comparisons of the four occupational categories did not yield significant differences on either the Femininity or the Masculinity dimension. When the employed women were compared to the unemployed housewives the differences were nonsignificant on the Femininity dimension. However, the employed women reported significantly more masculine traits than the unemployed women on the Masculinity dimension, t (78) = 2.24, $p < .03$. While the employed and unemployed women do not differ significantly on the Femininity dimension, the two groups score on opposite sides of the median of the normative sample. Thus the employed women appeared to endorse a large number of feminine characteristics while the unemployed women appeared to report relatively few feminine traits. On the Masculinity dimension the two groups appear significantly different in that the employed women report many masculine characteristics while the unemployed women endorse relatively few masculine traits. The group means classify the employed group as androgynous and classify the unemployed groups as undifferentiated in sex-type. It is worth noting that the unemployed group missed being classified as feminine sex-typed by .01 on the Femininity dimension. Thus the employed group appears to endorse a large number of both masculine and feminine traits while the unemployed group endorses relatively few feminine or masculine characteristics.

The Bem Sex-Role Inventory data were also examined according to each participant's individual sex-role classification. Frequencies and percentages of women classified as undifferentiated, feminine, androgynous or masculine in sex-role are listed according to occupational

category in Table 7. It appears that 20-25% of the women endorsed only a few masculine or feminine traits and were classified as undifferentiated in sex-role orientation. The next table, Table 8, presents the frequencies and percentages of employed and unemployed women classified as androgynous/masculine and feminine in sex-role. In this comparison the women classified as undifferentiated in sex role are left out. The masculine sex-reversed women who endorse significantly more masculine than feminine traits and the androgynous women who endorse large numbers of both masculine and feminine traits are compared to the feminine sex-typed women who endorse significantly more feminine characteristics than masculine characteristics.

Contingency tables were employed to examine the BSRI data. The first contingency table with occupational groups as one variable examined sex-role classification. The second contingency table with employment status as one variable (either employed or unemployed) compared the women for differences in sex-role classification (either feminine or androgynous/masculine). The chi-square and probability values for these two comparisons are shown in Tables 7 and 8, respectively.

The women classified as undifferentiated, feminine, androgynous and masculine in sex-role did not significantly differ in terms of occupational category. The 20-25% of women classified as undifferentiated in sex-role were left out of the next comparison of feminine versus androgynous/masculine women. As shown in Table 8 housewives were significantly more feminine in sex-role than employed women who were

Table 7

Frequencies and Percentages from Bem's Sex-Role Inventory by Occupational Category

Sex-Role classification	Physicians/ lawyers		Nursing professors		Nurses		Housewives		Chi-square (df = 9)	
	N	%	N	%	N	%	N	%	χ^2	Prob.
Undifferentiated	4	20	4	20	4	20	5	25	9.25	N.S.
Feminine	2	10	5	25	6	30	9	45		
Androgynous	9	45	6	30	6	30	2	10		
Masculine	5	25	5	25	4	20	4	20		

Table 8

Frequencies and Percentages from Bem's Sex-Role Inventory by Employment Status

Sex-Role classification	Employed		Unemployed		Chi-square (df = 1)	
	N	%	N	%	χ^2	Prob.
Feminine	13	27	9	60	5.45	.02
Androgynous/ Masculine	35	73	6	40		

more masculine or androgynous in sex-role, χ^2 (1) = 5.45, $p < .02$. One observes that 60% of the housewives were classified as feminine while 73% of the employed women were classified as androgynous or masculine in sex-role. It appears that the career oriented women deviate from the traditional feminine role and have redefined their role to include behaviors appropriate to both sexes. The housewives seemed more comfortable in restricting their behavior to stay within the cultural definitions of sex-appropriate behavior.

Achievement Behavior

Achievement behavior was measured by the author's Personal Accomplishments Survey (PAS) and Veroff et al.'s Assertive Competence Motivation (ACM) questionnaire. Addressing first the PAS data, the achievements were assigned to the following clusters: career, family-affiliation, individual growth and development and "other" achievements. The "other" categories included a smattering of accomplishments that could only be grouped in this cluster such as competitive activities/ hobbies, financial purchase, community service, vacationing and geographical move. The 23 descriptive categories and designated clusters are defined in Appendix D.

Kruskal-Wallis one-way ANOVAs examined the kinds of achievements listed on the PAS in each occupational category. The achievements were listed for three time periods: past year, college to present and whole life. The four occupational categories of women were compared for differences in the career, family-affiliation, individual growth and

development, "other" achievements, and five categories of "other" for each time period. Table K-1, Appendix K presents the mean ranks of various achievements listed by each occupational category for the past year, college to present and whole life time periods. Chi-square values and probability levels are also presented. The achievements that reached statistical significance were further analyzed in distribution-free multiple comparisons based on Kruskal-Wallis rank sums which compared one occupational category to another. These pairwise comparisons of rank sums obtained from the PAS may be found in Table K-2, Appendix K.

As illustrated in Tables K-1 and K-2, Appendix K, the groups differed significantly on career achievements, individual growth and development, and "other" achievements, competitive activities/hobbies and community service for the past year time period. Follow-up tests indicated that the housewives listed significantly fewer career achievements than the physicians/lawyers, nursing professors and nurses. The housewives also listed significantly more individual growth achievements that the physicians/lawyers and significantly more "other" achievements than the nursing professors.

Looking at the college to present time period the groups were significantly different on career and family-affiliation achievements. Follow-up tests revealed that the housewives reported significantly fewer career achievements than the physicians/lawyers and the nursing professors. The housewives reported significantly more family-affiliation achievements than each of the other occupations.

Significant differences for the whole life time period were found in career and family-affiliation achievements, competitive activities/ hobbies and financial purchase categories. Follow-up tests demonstrated that the nursing professors listed significantly more career achievements than the housewives and nurses. The housewives also listed significantly more family-affiliation achievements than the physicians/ lawyers.

To summarize these findings, the physicians/lawyers, nursing professors and nurses all reported significantly more career achievements for the past year than the housewives. This makes sense because the housewives are not employed outside the home and have few opportunities for work related achievements. For the college to present time period the physicians/lawyers and nursing professors reported significantly more career achievements than the housewives. These high status occupations appear heavily invested in pursuing graduate studies, competing for faculty positions and/or residencies and developing their career. For the whole life time period the nursing professors reported significantly more career achievements than the housewives and nurses. This finding seems to reflect an interest, pursuit and pride in job responsibility, career advancement, educational and intellectual achievements, and making money.

The housewives reported significantly more family-affiliation achievements than each of the employed occupations for the college to present time period. The housewives also listed significantly more family-affiliation achievements than the physicians/lawyers for the

whole life time period. The housewives emphasized other areas of achievements besides family-affiliation. For the past year the housewives reported significantly more individual growth achievements than the nursing professors. The housewives emphasized developing a sense of autonomy, self-confidence, self-acceptance, physical health and religious commitment. Looking at the "other" categories, the housewives listed more community service and competitive activities/hobbies as accomplishments than the employed women.

The next analysis subtracted the rank sums of family achievements from the rank sums of career achievements to ascertain which group, employed or unemployed, reported the most career or family achievements. These accomplishments were examined in Wilcoxon Rank Sums Tests comparing housewives to employed women. The mean scores, z-scores and probability values may be found in Table K-3, Appendix K. As shown in Table K-3, Appendix K, the employed women compared to the housewives reported significantly more career achievements than family-affiliation achievements for the past year, $z = -4.20$, $p < .0001$; college to present, $z = -4.88$, $p < .0001$; and whole life time periods, $z = -3.41$, $p < .0006$.

In order to determine which group, either housewives or employed women, reported the most career and family-affiliation achievements, Wilcoxon Rank Sums Tests compared the employed and unemployed women on these achievements. The mean scores, z-scores and probability values are reported in Table K-4, Appendix K. As illustrated in Table K-4, Appendix K, the employed women reported significantly more career

achievements than the housewives for the past year, $z = 5.29$, $p < .0001$; college to present $z = -4.27$, $p < .0001$; and whole life time periods, $z = -2.49$, $p < .01$. The housewives reported significantly more family-affiliation achievements then the employed women for the college to present, $z = 4.59$, $p < .0001$; and whole life time periods, $z = 2.74$, $p < .006$. However, the housewives did not report significantly more family-affiliation achievements than the employed women for the past year.

The next analysis subtracted family-affiliation achievements from career achievements for the employed women only. Then, the housewives' achievements were likewise compared. Wilcoxon matched-pairs signed rank test compared career and family achievements in each of the groups. Table K-5, Appendix K displays the number of women who report more career achievements than family achievements and their means, and the number of women who report more family achievements than career achievements and their means. Also included are z-scores and two-tailed probability values.

One observes from Table K-5, Appendix K that the employed women reported significantly more career achievements than family-affiliation achievements for the past year, $z = -3.78$, $p < .001$, two-tailed; and college to present time periods, $z = -4.18$, $p < .001$, two-tailed. However, the employed women did not report significantly more career than family achievements for the whole life time period. The housewives, in turn, reported significantly more family achievements than career achievements for the past year, $z = -2.72$, $p < .006$, two-tailed;

college to present, $z = -3.64$, $p < .001$, two-tailed; and whole life time periods, $z = -3.03$, $p < .002$, two-tailed.

The kinds of achievements listed on the Personal Accomplishments Survey are helpful in understanding what kinds of achievements women value as important. Achievements have typically been described for the male population in terms of achieving power, status or money. Yet housewives have enumerated achievements in interpersonal relations and family or domestic areas that they value as important. The employed women appear similar to the male population in that they emphasize achievements such as educational attainments, work competence, financial independence, job mobility and work satisfaction.

The four occupational groups were also compared for differences on the Assertive Competence Motivation questionnaire, the second measure of achievement behavior. The obtained scores ranged between 10 and 26, the higher scores representing more assertive competence motivation. Next, the high status employed women were compared to the medium status employed women who were in turn compared to the unemployed women for differences in their achievement measure. The means are given in Table 9 for the described occupational categories. These means appear quite similar.

Analysis of variance procedures were employed to assess the ACM data. First, an ANOVA compared the four occupational categories for differences in ACM. Then, an ANOVA compared the high status employed women to the medium status employed women. The last ANOVA compared the medium status employed women to unemployed women. The summary tables of

Table 9

Means of Assertive Competence Motivation
by Employment Status

Occupational category	N	Mean
Physicians/lawyers	20	19.2
Nursing professors	20	20.8
Nurses	20	19.9
Housewives	20	19.9
High status employed	40	20.0
Medium status employed	20	19.9
Unemployed	20	19.9

these comparisons are displayed in Table K-6, Appendix K. As shown in this table, the occupational group comparisons were nonsignificant. The comparisons of high status employed women to medium status employed women, and medium status employed women to unemployed women also yielded nonsignificant results.

Type A Behavior

The Jenkins Activity Survey (JAS) and Rosenman and Friedman's Structured Interview (SI) were employed to determine the manifestation of Type A behavior pattern. Looking first at the JAS data, the means of the component factors of the JAS, Type A, Speed and Impatience, Job Involvement and Hard-Driving and Competitive, are shown in Table 10 for each occupational category. The percentile ranks are also presented. Means in the positive direction and ranks above 50 indicate behavior classification towards the Type A end of the continuum while means in the negative direction and ranks below 50 indicate behavior classification towards the Type B end of the continuum. As illustrated in Table 10, the Hard-Driving and Competitive scores appear less Type A than the other JAS components.

The JAS component factors were examined in ANOVA and MANOVA procedures for differences between the four occupational categories. The components that reached statistical significance were further analyzed. Studentized Range pairwise comparisons compared one occupational category to another for significant differences between mean scores. Analysis of variance procedures also compared women in the

Table 10

JAS Factors by Employment Status

Occupational category	N	Type A		Speed and Impatience		Job Involvement		Hard-Driving	
		Mean	Percentile rank	Mean	Percentile rank	Mean	Percentile rank	Mean	Percentile rank
Physicians/ lawyers	20	10.5	85	8.6	80	9.1	80	1.2	60
Nursing professors	20	4.5	65	3.6	65	9.1	80	-4.7	35
Nurses	20	3.9	60	5.2	70	4.3	65	-1.0	50
Housewives	20	1.6	55	3.5	65	6.8	70	1.3	60
Male-dominated employed	20	10.5	85	8.6	80	9.1	80	1.2	60
Female-dominated employed	40	4.2	65	4.4	70	6.7	70	-2.8	45
Female-dominated unemployed	20	1.6	55	3.5	65	6.8	70	1.3	60

male-dominated occupations to employed women in female-dominated occupations for differences in JAS component scores, and then compared women employed in female-dominated occupations to unemployed women in the female-dominated occupation. A summary table of the ANOVAs and MANOVA may be found in Table L-1, Appendix L. The Studentized Range pairwise comparisons for JAS scores compared by occupational category are displayed in Table L-2, Appendix L.

As presented in Table L-1 and L-2, Appendix L, JAS scores were significantly different for the four groups, F (1, 76) = 3.41, $p < .02$, with physicians/lawyers scoring the most Type A followed by nursing professors, nurses and housewives. Follow-up tests demonstrated that physicians/lawyers were more Type A than the housewives (Tukey value $p < .05$). The four occupational groups did not differ on the other JAS components. The MANOVA also achieved statistical significance F (12, 193) = 2.33, $p < .008$.

The next comparison demonstrated that the women in male-dominated occupations exhibited a more extreme manifestation of the Type A coronary-prone behavior pattern than the employed women in female-dominated occupations as reflected in JAS Type A scores, F (1, 58) = 7.15, $p < .01$. Compared to the women in female-dominated occupations the women in male-dominated occupations exhibit excessive, drive, aggression, hostility, ambition and competitiveness and strive to meet deadlines and other work pressures with an enhanced sense of time urgency. Comparisons of the male-dominated occupation to the employed female-dominated occupations on the other JAS component factors yielded

no significant results. Comparisons of the employed female-dominated occupations to the housewife population on all of the JAS components were also nonsignificant.

The second Type A measure, the Structured Interview, classified the women as either Type A1, A2 or B in behavior pattern. Type A1s manifest the most extreme Type A behavior pattern while Type Bs exhibit little or no Type A behavior. The number and percentage of women in each occupational category classified as either Type A1, A2 or B are shown in Table 11. The sample appears skewed toward the Type A end of the continuum with only 10-25% of each occupation classified as Type B. Contingency tables compared the four occupational categories for differences in SI classification. The results were nonsignificant.

The Types A1 and A2 were then combined to form an overall Type A group. Types A and B were compared for representation in employed and unemployed women. A contingency table compared women employed in male-dominated occupations to women employed in female-dominated occupations for differences in behavior pattern. Next, employed women in female-dominated occupations were compared to unemployed women in the female dominated occupation. As illustrated in Table 12 the three groups were not significantly different in that 90% of the physicians/lawyers, 90% of the housewives and 75% of the nursing professors and nurses were classified as Type A.

Systolic and diastolic blood pressure readings were obtained for the women. Blood pressure means are presented in Table 13 for the various occupational groups. Analysis of variance compared the four

Table 11

Frequencies and Percentages of SI Classifications
by Occupational Category

Structured Interview classification	Physicians/ lawyers		Nursing professors		Nurses		Housewives		Chi-square (df = 6)	
	N	%	N	%	N	%	N	%	χ^2	Prob.
Type A1	8	40	6	30	4	20	6	30	4.38	N.S.
Type A2	10	50	9	45	11	55	12	60		
Type B	2	10	5	25	5	25	2	10		
	20	100	20	100	20	100	20	100		

Table 12

Frequencies and Percentages of SI Classifications
by Employment Status

Structured Interview classification	Male-dominated employed		Female-dominated employed		Female-dominated unemployed		Chi-square (df = 1)	
	N	%	N	%	N	%	χ^2	Prob.
Type A	18	90	30	75			1.87	N.S.
Type B	2	10	10	25				
	20	100	40	100				
Type A			30	75	18	90	1.87	N.S.
Type B			10	25	2	10		
			40	100	20	100		

Table 13

Blood Pressure by Employment Status

Occupational category	N	Systolic blood pressure	Diastolic blood pressure
Physicians/ lawyers	20	114.3	74.4
Nursing professors	20	112.2	76.6
Nurses	20	113.5	76.5
Housewives	20	113.9	77.2
Employed women	60	113.4	75.8
Unemployed women	20	113.9	77.2

occupational categories for differences in diastolic and systolic blood pressure. Then t-tests compared the employed women to the housewives for differences in blood pressure. As enumerated in Table 13, the mean blood pressures appear quite similar. Summary data from the ANOVA may be found in Table L-3, Appendix L and summary data from the t-tests are shown in Table L-4, Appendix L. As shown in these tables the comparisons were nonsignificant. Thus the sample was homogeneous in obtained blood pressure.

Other Tests

Correlations

A correlation matrix was computed including the background information and questionnaire data as variables. Categorical variables were not included in the matrix. Correlation coefficients and significant probability levels for age, hours worked per week, education, number of children, hours per week spent in volunteer activities, husband's occupation and education, mother's education, father's occupation and education, Brogan and Kutner's Sex-Role Orientation scale, Bem's Sex-Role Inventory (Masculinity and Femininity dimensions), Assertive Competence Motivation questionnaire, Jenkins Activity Survey component factors and systolic and diastolic blood pressures were included. The correlation coefficients are displayed in Table 14.

There were many significant correlations. Age was correlated with several variables. The older the woman the more likely she was to have more children ($r = .39$, $p < .0004$), have a husband with a lower status

Table 14

Correlation Coefficients and Probability Levels for Background Information and Questionnaire Data

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Age	1.00																			
2. Hours worked per week	-.13	1.00																		
3. Education	-.03	.29*	1.00																	
4. Number of children	.37***	-.05	.05	1.00																
5. Hours volunteer work per week	.05	-.11	-.22*	.13	1.00															
6. Husband's occupation	-.26*	.01	.09	-.01	.13	1.00														
7. Husband's education	-.13	.05	.28*	.07	.27*	.62***	1.00													
8. Mother's education	-.07	-.02	.06	.05	.34**	.19	.25*	1.00												
9. Father's occupation	-.14	.18	-.05	-.18	.31**	.04	.01	.22	1.00											
10. Father's education	.04	-.03	.09	.07	.13	.03	-.04	.31**	.20	1.00										
11. Sex-Role Orientation	-.09	.06	.19	-.04	-.23*	-.17	.01	-.07	-.10	-.16	1.00									
12. BSRI Femininity	.11	-.02	.02	.13	-.22*	-.26*	-.27	.02	.02	.03	.11	1.00								
13. BSRI Masculinity	.03	.17	.25*	.12	-.07	-.19	-.10	-.06	.03	.12	.22*		1.00							
14. Assertive Competence Motivation	-.08	.12	.02	-.08	.09	-.04	-.02	.08	.07	.01	.22*	-.04	.32**	1.00						
15. JAS Type A	-.04	.38*	.39***	.10	.04	-.08	.07	-.05	.12	-.02	.07	-.13	.57***	.13	1.00					
16. JAS Speed and Impatience	-.21	.22	.29**	.01	-.13	-.04	-.01	-.05	-.04	-.03	.09	-.05	.24*	-.08	.65***	1.00				
17. JAS Job Involvement	-.12	.53***	.32**	.06	.06	.02	.22	.18	.23*	.01	.02	.23*	.35***	.19	.42***	.34***	1.00			
18. JAS Hard-Driving	-.12	.41***	.01	.02	.18	.11	.13	-.08	.20	-.08	-.03	-.06	.29**	.12	.62***	.32**	.22*	1.00		
19. Systolic blood pressure	-.01	.25	.07	.01	.04	-.05	.07	.19	.14	.01	-.01	-.01	.09	.07	-.03	-.01	.08	-.05	1.00	
20. Diastolic blood pressure	.05	.22	.02	-.07	.12	.01	.01	.15	.12	-.01	.12	.05	.10	.03	.07	.13	.20	.73	.57***	1.00

* $p < .05$
** $p < .01$
*** $p < .001$

occupation (r = -.26, p < .04), and have a father with less education (r = -.23, p < .04) compared to younger women.

The more hours a woman worked per week the more likely she was to have a higher education (r = .29, p < .02) and be more Type A with higher JAS Type A (r = .38, p < .002), Job Involvement (r = .52, p < .0001) and Hard-Driving (r = .41, p < .001) scores.

The more education a woman had the less time she devoted to volunteer activities (r = -.22, p < .05) and the more she appeared Type A with higher JAS Type A (r = .40, p < .003), Speed and Impatience (r = .29, p < .008) and Job Involvement (r = .32, p < .003) scores. She was also likely to have a husband with more education (r = .27, p < .007).

Women who devoted more time to volunteer activities were more likely to come from a higher socioeconomic class with a more educated mother (r = .34, p < .002), father (r = .28, p < .01) and husband (r = .27, p < .03) and father with higher status occupation (r = .30, p < .007).

For the husbands, more years of education was associated with higher status occupation (r = .62, p < .0001). Women with mothers who had more education also had husbands (r = .25, p < .05) and fathers (r = .37, p < .0007) with more years of education. More years of mother's education was also associated with higher occupational status of father (r = .24, p < .03).

Sex-role and achievement behavior were significantly correlated. A more nontraditional sex-role orientation was associated with more

achievement behavior as determined by the Assertive Competence Motivation questionnaire (r = .22, p < .05). The more traditional women devoted more time to volunteer activities (r = -.23, p < .04).

Examination of the BSRI Femininity scale suggested that women who endorsed relatively few feminine characteristics were more likely to devote more hours to volunteer work (r = -.22, p < .05) and have husbands with higher status occupations (r = .26, p < .04). Women who endorsed a large number of feminine traits were likely to be highly invested in their work as reflected by the JAS Job Involvement association (r = .23, p < .04).

The Masculinity dimension of the BSRI was positively associated with several variables. Women who endorsed a relatively large number of masculine characteristics were more likely to have more years of education (r = .25, p < .02), appear more nontraditional in sex role (r = .22, p < .05) and exhibit relatively more achievement behavior as determined by the Assertive Competence Motivation (r = .32, p < .004). High endorsement of masculine traits was associated with higher scores on all of the JAS components. That is, women who endorsed many masculine qualities appear more Type A (r = .57, p < .0001), and score more towards the Type A end of the continuum on Speed and Impatience (r = .24, p < .03), Job Involvement (r = .35, p < .001) and Hard-Driving and Competitive (r = .29, p < .008) components.

Women with more extreme JAS Type A behavior patterns were also likely to have higher JAS Speed and Impatience (r = .65, p < .0001), JAS Job Involvement (r = .42, p <.0001), and Hard-Driving scores (r = .62,

$p < .0001$). Higher JAS Job Involvement scores were associated with higher JAS Hard-Driving scores ($r = .22$, $p < .05$) and fathers with more years of education ($r = .26$, $p < .02$). Higher levels of Speed and Impatience were associated with higher scores on Job Involvement ($r = .34$, $p < .002$) and Hard-Driving ($r = .32$, $p < .004$) components.

Higher systolic blood pressure was associated with higher diastolic blood pressure ($r = .57$, $p < .0001$).

Structured Interview Type A

The participants were divided according to Types A1, A2 and B behavior pattern as determined by the Structured Interview. There were 24 A1s, 42 A2s and 14 Bs. Thus, 30% of the women were classified as Type A1, 52% were classified as Type A2 and 18% were classified as Type B. The three groups were then compared for differences on the background information variables and questionnaire scores.

Background information. The personal data including the participant's marital status, age and number of children are presented in Table 15. The means for age, number of children and the percentages of married women are listed for each behavior pattern. The women appear similar on these variables.

The vocational data including participant's occupational category, years of education whether working by "choice, necessity or for both reasons," hours worked per week and hours per week spent in volunteer activities each week are presented in Table 16. The means for education, hours worked per week, hours spent in volunteer activities each

Table 15

Marital Status, Age and Number of Children
by SI Behavior Pattern

Variable	Type A1	Type A2	Type B
Marital status[a]	91.7	69.0	85.7
Age	36.7	36.2	38.8
Number of children	1.6	1.9	2.2

[a]Percentage married in each behavior pattern.

Table 16

Occupation, Years of Education, Why Working, Hours Worked and Hours Volunteer Work by SI Behavior Pattern

Variable	Type A1	Type A2	Type B
Occupation:[a]			
Physicians/ lawyers	33.3	23.8	14.3
Nursing professors	25.0	21.4	35.7
Nurses	16.7	26.2	35.7
Housewives	25.0	28.6	14.2
	100.0	100.0	100.0
Years of education	18.2	17.6	17.4
Working by:[b]			
Choice	66.7	61.9	64.3
Necessity	12.5	9.5	21.4
Both	20.8	28.6	14.3
	100.0	100.0	100.0
Hours worked per week	49.1	51.4	49.8
Hours volunteer work per week	5.6	4.7	3.6

[a]Percentage of occupation in each behavior pattern.
[b]Percentage working by choice, necessity or for both reasons in each behavior pattern.

week and the percentage of women working by "choice, necessity or for both reasons" are listed for Types A1, A2 and B. Again, the women appear similar on these background information variables.

The socioeconomic data including husband's, father's and mother's education and occupation are presented in Table 17. The means for years of education, husband's and father's occupational status, and the percentages of mother's activity in various occupations are shown for each behavior pattern. As illustrated in Table 17, the behavior patterns appear homogeneous on these variables.

The background information variables were examined for differences between the three Structured Interview behavior types. Analysis of variance compared Types A1, A2 and B behavior patterns on participant's age, hours worked per week, number of children, husband's and father's occupational status. Summary tables displaying the ANOVA procedures may be found in Table M-1, Appendix M. There were no significant differences between the three groups on these variables.

Kruskal-Wallis one-way ANOVAs examined participant's education, hours per week spent in volunteer activities, husband's, father's and mother's education for differences between the three groups. Mean ranks for each behavior pattern are listed in Table M-2, Appendix M. Chi-square and probability values are also shown. The differences between the behavior types were nonsignificant on these background information variables.

The last of the background data were examined in contingency tables. Contingency tables with behavior pattern as one variable

Table 17

Husband's, Father's and Mother's Education and Occupation by SI Behavior Pattern

Variable	Type A1	Type A2	Type B
Education:[a]			
Husband	18.1	17.7	16.5
Father	14.5	14.1	14.8
Mother	13.2	13.7	13.6
Occupation:			
Husband[b]	72.9	72.0	67.2
Father[b]	51.6	52.9	52.1
Mother:[c]			
Always housewife	58.3	50.0	57.1
Housewife then worker (lower status)	12.5	26.2	21.4
Housewife then worker (higher status)	16.7	7.1	21.4
Always fulltime worker	12.5	16.7	.0

[a] Years of education.

[b] Occupational status derived from Featherman and Stevens (1982).

[c] Percentage of mother's activity in each behavior pattern.

examined marital status, occupational category, whether a woman was working by "choice, necessity or for both reasons," and mother's occupation. No significant differences were obtained. Table M-3, Appendix M displays the chi-square and probability values for marital status occupational category, why working and mother's occupation.

Sex-role orientation. The means and standard deviations from Brogan and Kutner's Sex-Role Orientation scale are listed for each behavior pattern in Table 18. Analysis of variance compared the three behavior patterns for differences in sex-role orientation. A summary table of the ANOVA results is presented in Table M-4, Appendix M. Differences between the groups were nonsignificant.

Addressing next the Bem Sex-Role Inventory data, Masculinity and Femininity t-scores, means, standard deviations and sex-role classifications are presented according to the Structured Interview behavior classification in Table 19. A Femininity score ≥ 4.91 was considered high while scores <4.90 were considered low. A Masculinity score ≥ 4.96 was considered high while scores <4.95 were considered low. Thus, subjects high on femininity and low on masculinity were classified as feminine, subjects high on masculinity and low on femininity were classified as masculine, subjects low on both dimensions were classified as undifferentiated, and subjects high on both dimensions were classified as androgynous. From Table 19 one notes that both Types A1 and A2 are classified as androgynous while Type B individuals are classified as feminine. All groups reported a high endorsement of feminine traits. However, on the Masculinity dimension Type As and Type Bs scored on

Table 18

Means and Standard Deviations of Brogan and Kutner's SRO by SI Behavior Pattern

Structured Interview classification	N	Mean	Standard deviation
Type A1	24	193.2	13.0
Type A2	42	193.8	17.7
Type B	14	192.8	18.6

Table 19

Masculinity and Femininity Scores from Bem's Sex-Role Inventory by SI Behavior Pattern

BSRI	Type A1	Type A2	Type B
Femininity			
T-score	51	53	53
Mean	4.92	5.02	4.98
S.D.	.44	.53	.31
Masculinity			
T-score	51	52	47
Mean	5.07	5.10	4.76
S.D.	.70	.59	.72
Classification	Androgynous	Androgynous	Feminine

opposite sides of the median of the normative sample. Thus Type As endorsed a large number of masculine characteristics while Type Bs reported relatively few masculine traits. Thus, both Type A1 and A2 individuals appear to have redefined their sex-role to include behavior appropriate for both sexes.

Analysis of variance compared the behavior patterns on the Masculinity and Femininity dimensions of the BSRI. The ANOVA summary table is shown in Table M-4, Appendix M. Comparisons of the three behavior patterns did not yield any significant differences on either the Femininity or Masculinity dimension.

Next, each individual's sex-type classification was examined. The percentages of women classified as either undifferentiated, feminine, androgynous or masculine from Bem's Sex-Role Inventory are shown for Types A1, A2 and B in Table 20. It appears that almost 36% of the Type Bs are classified as undifferentiated in sex-role compared to less than 21% of the Type As. Only 7% of the Bs are classified as masculine compared to over 23% of the A2s and 29% of the A1s. A contingency table with behavior pattern as one variable examined the groups for differences in sex-role classification. The chi-square and probability values are also presented in Table 20. The participants classified as undifferentiated, feminine, androgynous and masculine were not significantly different from each other when compared by behavior pattern.

The women classified as undifferentiated were left out of the next analysis. The feminine sex-typed women were compared to the androgynous/masculine women for differences in behavior pattern.

Table 20

Percentages of Bem's Sex-Role Inventory
by SI Behavior Pattern

Sex-role classification	Type A1	Type A2	Type B	Chi-square (df = 6) χ^2	Prob.
Undifferentiated	20.8	16.7	35.7	4.85	N.S.
Feminine	20.8	28.6	35.7		
Androgynous	29.2	30.9	21.4		
Masculine	29.2	23.8	7.1		
	100.0	100.0	100.0		

Contingency tables with sex-role classification as one variable compared Types A1, A2 and B. The percentages of feminine and androgynous/ masculine women, chi-square and probability values are shown in Table 21. The differences between the groups were nonsignificant.

Achievement behavior. The three Structured Interview behavior patterns were compared for differences on each of the achievement measures, the Personal Accomplishments Survey (PAS) and Assertive Competence Motivation (ACM) questionnaire. Kruskal-Wallis one-way ANOVAs examined the kinds of achievements listed on the PAS by each behavior type. The achievements were reported for three time periods: past year, college to present and whole life. The three groups were compared for differences in career, family-affiliation, individual growth and development, "other" achievements, and five categories of "other" for each time period. The mean ranks of the achievements reported by Types A1, A2 and B for the three time periods are displayed in Table M-5, Appendix M. The chi-square and probability values are also presented. No significant differences were obtained.

Types A1, A2 and B were also compared for differences in Assertive Competence Motivation, the second achievement measure. The means for each behavior type are shown in Table 22. Analysis of variance compared the three groups and the summary data may be found in Table M-4, Appendix M. The groups were not significantly different on this achievement measure.

Table 21

Percentages of Feminine and Androgynous/Masculine Classifications by SI Behavior Pattern

Sex-role classification	Type A1	Type A2	Type B	Chi-square (χ^2 (df = 2))	Prob.
Feminine	26.3	34.3	55.6	2.31	N.S.
Androgynous/ Masculine	73.7	65.7	44.4		

Table 22

Means of Assertive Competence Motivation by SI Behavior Pattern

Structured Interview classification	N	Mean
Type A1	24	20.0
Type A2	42	19.8
Type B	14	20.2

Jenkins Activity Survey Type A. The JAS component factors, Type A, Speed and Impatience, Job Involvement, and Hard-Driving and Competitive, were compared for differences between Types A1, A2 and B. The means and percentile ranks for each JAS factor are displayed in Table 23. Means in the positive direction and ranks above 50 indicate behavior classification towards the Type A end of the continuum while means in the negative direction and ranks below 50 indicate behavior classification towards the Type B end of the continuum. Analysis of variance procedures examined each of the JAS components for differences between the Structured Interview classifications. Summary tables of the ANOVA for each JAS component may be found in Table M-6, Appendix M. None of the JAS component factors were significantly different between the three groups.

Blood pressure. The three behavior patterns were also compared for differences in systolic and diastolic blood pressure. The blood pressure means for Type A1, A2 and B are displayed in Table 24. Analysis of variance compared the three behavior patterns for differences in blood pressure. Summary data for the two ANOVAs are presented in Table M-6, Appendix M. The blood pressures were not significantly different for the three groups.

Jenkins Activity Survey Type A

Next, the participants were divided into three groups according to Type A scores from the Jenkins Activity Survey (JAS). The women with JAS Type A scores ≥+5.0 (65th percentile) were classified as Type A

Table 23

JAS Components by SI Behavior Pattern

Structured Interview classification	N	Type A		Speed and Impatience		Job Involvement		Hard-Driving	
		Mean	Percentile rank	Mean	Percentile rank	Mean	Percentile rank	Mean	Percentile rank
Type A1	24	7.4	75	7.2	75	8.4	75	1.8	60
Type A2	42	5.1	65	5.3	70	7.0	75	-.7	50
Type B	14	1.3	55	1.6	60	6.4	70	-5.2	35

Table 24

Blood Pressure by SI Behavior Pattern

Structured Interview classification	N	Systolic blood pressure	Diastolic blood pressure
Type A1	24	116.3	78.4
Type A2	42	112.5	75.1
Type B	14	111.5	75.6

while women with scores ≦-5.0 (35th percentile) were classified as Type B. The women scoring in the middle range between +5.0 and -5.0 were classified as Type X. There were 45 As, 21 Xs and 14 Bs. The three groups were compared for differences on background information variables, questionnaire scores and Structured Interview classifications.

Background information. Participant's marital status, age and number of children are presented in Table 25. The means for age, number of children and the percentages of married woman are listed for each behavior pattern. Contingency tables with behavior pattern as one variable examined marital status. The results were nonsignificant. Table N-1, Appendix N displays the chi-square and probability values for marital status. Analysis of variance compared Types A, X and B on participant's age and number of children. Summary tables of the ANOVA procedures are found in Table N-2, Appendix N. Differences in participant's age and number of children were nonsignificant.

The vocational data including participant's occupational category, years of education, whether working by "choice, necessity, or for both reasons," hours worked per week and hours spent in volunteer activities each week are presented in Table 26. The means for education, hours worked, hours spent in volunteer activities and the percentages of women working by "choice, necessity or for both reasons" are shown for JAS Types A, X and B.

Kruskal-Wallis one-way ANOVAs examined participant's education and hours per week spent in volunteer activities for differences between

Table 25

Marital Status, Age and Number of Children
by JAS Type A Behavior Pattern

Variable	Type A	Type X	Type B
Marital status[a]	80.0	71.4	85.7
Age	36.1	38.7	36.0
Number of children	1.9	1.8	1.7

[a]Percentage married in each behavior pattern.

Table 26

Occupation, Years of Education, Why Working, Hours Worked and Hours Volunteer Work by JAS Type A Behavior Pattern

Variable	Type A	Type X	Type B
Occupation:[a]			
Physicians/ lawyers	35.6	14.3	7.1
Nursing professors	22.2	28.6	28.6
Nurses	20.0	38.1	21.4
Housewives	22.2	19.0	42.9
	100.0	100.0	100.0
Years of education[b]*	18.2	17.2	16.9
Working by:[c]			
Choice	68.9	57.1	57.1
Necessity	8.9	19.1	14.3
Both	22.2	23.8	28.6
	100.0	100.0	100.0
Hours worked** per week	53.4	48.1	42.5
Hours volunteer work per week	5.4	3.3	5.0

[a]Percentage of occupation in each behavior pattern.

[b]Groups significantly different at $*p < .05$
$**p < .01$.

[c]Percentage working by choice, necessity or for both reasons in each behavior pattern.

Types A, X and B. Wilcoxon scores, chi-square and probability values are listed in Table N-4, Appendix N. Follow-up Wilcoxon Rank Sum tests were performed on variables that reached statistical significance and may be found in Table N-5, Appendix N. Contingency tables with behavior pattern as one variable examined participant's occupational category and why a woman was working. Table N-1, Appendix N displays chi-square and probability values for occupational category and why working. Analysis of variance compared the behavior types for differences in hours worked per week. Summary tables displaying the ANOVA procedures are shown in Table N-2, Appendix N.

Refer to Table 26 for the group means during the explanation of the significant findings. Years of education was significantly different between the three groups, χ^2 (2) = 7.67, $p < .02$. Follow-up tests indicated that Type As have significantly more years of education than both Type Xs, $z = -2.22$, $p < .03$, and Type Bs, $z = -2.19$, $p < .03$. Examination of why a woman was working yielded nonsignificant results. Hours worked per week was significantly different, F (2, 57) = 5.43, $p < .007$. Follow-up t-tests showed that Type Bs worked fewer hours than Type As, t (24.5) = 5.18, $p < .0001$. Differences in hours per week spent in volunteer activities were nonsignificant.

The socioeconomic data including husband's, father's and mother's education and occupation are presented in Table 27. The means for years of education, husband's and father's occupational status, and the percentages of mother's activity in various occupations are listed for Types A, X and B.

Table 27

Husband's, Father's and Mother's Education and Ocupation
by JAS Type A Behavior Pattern

Variable	Type A	Type X	Type B
Education:[a]			
Husband	17.2	17.2	17.4
Father	14.9	13.7	13.6
Mother	13.6	12.9	14.1
Occupation:			
Husband[b]	70.9	70.5	74.2
Father[b]	56.7	43.6	51.1
Mother:[c]			
Always housewife	55.6	61.9	35.7
Housewife then worker (lower status)	22.2	9.5	35.7
Housewife then worker (higher status)	11.1	19.1	7.1
Always fulltime worker	11.1	9.5	21.4

[a]Years of education.

[b]Occupational status derived from Featherman and Stevens (1982).

[c]Percentage of mother's activity for each behavior pattern.

Kruskal-Wallis one-way ANOVAs examined husband's, father's and mother's education for differences between the three groups. Wilcoxon mean scores, chi-square and probability values are shown in Table N-4, Appendix N. Analysis of variance compared Types A, X and B on husband's and father's occupational status. Summary tables displaying the ANOVA procedures may be found in Table N-2, Appendix N. Contingency tables with behavior pattern as one variable examined mother's occupation. Table N-1, Appendix N displays chi-square and probability values for mother's occupation.

The means for these socioeconomic variables are shown in Table 27. Group differences in husband's, father's and mother's education were nonsignificant. Group differences in husband's, father's and mother's occupation were also nonsignificant. Thus, Types A, X and B did not differ in terms of socioeconomic background.

Sex-role orientation. The means and standard deviations obtained from Brogan and Kutner's Sex-Role Orientation scale are presented for each behavior pattern in Table 28. Analysis of variance compared Types A, X and B for differences in sex-role orientation. A summary table of the ANOVA results is presented in Table N-6. Differences between the three groups were nonsignificant.

Turning next to the Bem Sex-Role Inventory data, Masculinity and Femininity *t*-scores, means, standard deviations and sex-role classifications are presented according to JAS behavior pattern in Table 29. A Femininity score ≥ 4.91 was considered high while scores <4.90 were considered low. A masculinity score ≥ 4.96 was considered high while

Table 28

Means and Standard Deviations of Brogan and Kutner's SRO by JAS Type A Behavior Pattern

JAS Type A classification	N	Mean	Standard deviation
Type A	45	194.2	17.9
Type X	21	192.8	14.4
Type B	14	192.0	15.3

Table 29

Masculinity and Femininity Scores from Bem's Sex-Role Inventory by JAS Type A Behavior Pattern

BSRI	Type A	Type X	Type B
Femininity			
T-score	52	52	56
Mean	4.95	4.94	5.16
S.D.	.49	.46	.40
Masculinity			
T-score	55	48	43
Mean	5.31	4.79	4.46
S.D.	.53	.58	.63
Classification	Androgynous	Feminine	Feminine

scores <4.95 were considered low. Thus, participants high on femininity and low on masculinity were classified as feminine, participants high on masculinity and low on femininity were classified as masculine, participants low both dimensions were classified as undifferentiated, and subjects high on both dimensions were classified as androgynous. Table 29 illustrates that Type As are classified as androgynous while both Type Xs and Bs are classified as feminine is sex-type.

Analysis of variance compared the behavior patterns on the Masculinity and Femininity dimensions of the BSRI. Follow-up *t*-tests compared each behavior pattern to another. The ANOVA summary table is shown in Table N-6, Appendix N, while the *t*-test summary data may be found in Table N-7, Appendix N.

Comparisons of the three behavior patterns did not yield any significant differences on the Femininity dimension. Each behavior pattern reported a large number of feminine characteristics. The groups were significantly different on the Masculinity dimension, F (2,77) = 14.63, $p < .0001$. Follow-up *t*-tests demonstrated that Type As reported significantly more masculine traits than either Type Xs, t (64) = 3.60, $p < .0006$, or Type Bs, t (57) = 4.97, $p < .0001$. Type As appear to have redefined their sex-role to include behaviors appropriate for both sexes while the Type Xs and Bs limit their sex-role behavior to conform to culturally defined feminine behavior.

Next, each participant's sex-type classification was examined. The percentages of women classified as either undifferentiated, feminine, androgynous or masculine as determined by the BSRI are presented for

each behavior pattern in Table 30. A contingency table with behavior pattern as one variable examined the groups for differences in sex-role classification. Chi-square and probability values are also presented in Table 30. The differences in sex-type between the three behavior types were significant, χ^2 (6) = 21.19, $p < .002$. Follow-up comparisons are also shown in Table 30. One observes that the Type As are predominantly androgynous and masculine in sex-role classification while Type Bs are predominantly feminine in sex-type. A large percentage of the Type Xs are undifferentiated in sex-type. Type As were significantly different from both Type Xs, χ^2 (3) = 10.89, $p < .01$, and Type Bs, χ^2 (3) = 11.42, $p < .01$.

The women classified as undifferentiated were left out of the next comparison. The feminine sex-typed women were compared to the androgynous/masculine women for differences in behavior pattern. Contingency tables with sex-role classification as one variable compared Types A, X and B. Then pairwise analysis compared one behavior type to another for differences in sex-role classification. The percentages, chi-square and probability values are presented in Table 31. The three behavior patterns appeared significantly different from each other. χ^2 (2) = 9.87, $p < .007$. Follow-up tests demonstrated that Type As and Bs differed the most, χ^2 (1) = 9.79, $p < .002$. Looking at Table 31, one observes that 77% of the Type As are classified as androgynous/masculine in sex-role while 73% of the Type Bs are classified as feminine in sex-role. Recall that Type A behavior encompasses stereotyped male behaviors such as competitiveness, ambitiousness and aggressiveness.

Table 30

Percentages of Bem's Sex-Role Inventory by JAS
Type A Behavior Pattern

Sex-Role Classification	Type A	Type X	Type B	Chi-square χ^2	Prob.
				(df = 6)	
Undifferentiated	11.1	42.9	21.4	21.19	.002
Feminine	20.0	23.8	57.2		
Androgynous	33.3	23.8	21.4		
Masculine	35.6	9.5	0.0		
				(df = 3)	
Undifferentiated	11.1	42.9		10.89	.01
Feminine	20.0	23.8			
Androgynous	33.3	23.8			
Masculine	35.6	9.5			
				(df = 3)	
Undifferentiated	11.1		21.4	11.42	.01
Feminine	20.0		57.2		
Androgynous	33.3		21.4		
Masculine	35.6		0.0		
				(df = 3)	
Undifferentiated		42.9	21.4	4.99	N.S.
Feminine		23.8	57.2		
Androgynous		23.8	21.4		
Masculine		9.5	0.0		

Table 31

Percentages of Feminine and Androgynous/Masculine Classifications by JAS Type A Behavior Pattern

Sex-Role classification	Type A	Type X	Type B	Chi-square df	Chi-square χ^2	Chi-square Prob.
Feminine	22.5	41.7	72.7	2	9.87	.007
Androgynous/ masculine	77.5	58.3	27.3			
Feminine	22.5	41.7		1	1.72	N.S.
Androgynous/ masculine	77.5	58.3				
Feminine	22.5		72.7	1	9.79	.002
Androgynous/ masculine	77.5		27.3			
Feminine		41.7	72.7	1	2.25	N.S.
Androgynous/ masculine		58.3	27.3			

Achievement behavior. The three JAS behavior patterns were compared for differences on each of the achievement measures, the PAS and ACM questionnaire. Kruskal-Wallis one-way ANOVAs examined the kinds of achievements listed on the PAS by Types A, X and B. The achievements were reported for three time periods: past year, college to present and whole life. The three groups were compared for differences in career, family-affiliation, individual growth and development, "other" achievements, and five categories of "other" for each time period. The mean ranks of the achievements reported by Types A, X and B for the three time periods are displayed in Table N-8, Appendix N. The chi-square and probability values are also presented. Distribution-free multiple comparisons were used to examine the achievements that reached statistical significance. These pairwise comparisons of rank sums obtained from the PAS may be found in Table N-9, Appendix N. The three behavior patterns hardly differed on this measure at all. The groups differed significantly only on competitive activities/hobbies reported for the past year, χ^2 (1) = 8.39, $p < .01$. The groups also differed significantly on vacationing for the whole life period, χ^2 (1) = 6.31, $p < .04$. Follow-up tests did not reveal further differences between the behavior patterns on these two achievements. The other achievements were not significantly different among the three behavior patterns.

Types A, X and B were also compared for differences in ACM, the second achievement measure. The means for each behavior type are shown in Table 32. Analysis of variance compared the three groups and the summary data may be found in Table N-6, Appendix N. Differences between the three groups were nonsignificant.

Table 32

Means of Assertive Competence Motivation
by JAS Type A Behavior Pattern

JAS Type A classification	N	Mean
Type A	45	20.5
Type X	21	18.8
Type B	14	20.0

Structured Interview Type A. The Type A behavior patterns as determined by the SI were compared to the JAS Type A classifications. The row and column percentages of JAS behavior type classified as SI Type A1, A2 and B are displayed in Table 33. A contingency table with JAS behavior pattern as one variable examined the three groups for differences in SI classification. The chi-square and probability values are also presented in Table 33. The results of these comparisons were close but nonsignificant. Note that both instruments have an intermediate category. For the JAS Type X category, its relation to the SI seems to be a bell shaped curve with most (42.9%) of the individuals being labelled Type A2 by the SI. For the SI, the Type A2 category is skewed to the Type A end of the JAS, yet substantial numbers of individuals (21.4%) are labelled Type B. These intermediate categories reflect difficulties both with the A/B concept and with the instruments. In a further attempt to examine their congruence, comparisons were made of JAS A and B classifications with SI A1s and Bs, omitting the intermediate groups. The row and column percentages, chi-square and probability values are shown in Table 34. The SI classification correctly identifies JAS Type As 94% of the time. However, the SI Type B classification only agrees half of the time with JAS classifications. Turning next to the JAS behavior classifications, both Type As and Bs were in agreement with the SI about 80% of the time. While JAS Types A and B and SI Type As were correctly identified at least 80% of the time, the SI Type B determination was only in agreement with the JAS 50% of the time. Thus, the JAS appears to be a more discriminating

Table 33

Percentages of SI Behavior Pattern by JAS Type A Behavior Pattern

Structured Interview classification	JAS Type A	JAS Type X	JAS Type B	Chi-square (df = 4) χ^2	prob
Type A1					
Row	70.8	25.0	4.2	8.47	N.S.
Column	37.8	28.6	7.1		
Type A2					
Row	57.1	21.4	21.4		
Column	53.3	42.9	64.3		
Type B					
Row	28.6	42.9	28.6		
Column	8.9	28.6	28.6		

Table 34

Percentages of Agreement Between SI Behavior Pattern and JAS Type A Behavior Pattern

Structured Interview classification	JAS Type A	JAS Type B	Fisher's Exact Test (two-tail) Prob.
Type A1			
Row	94.5	5.5	.02
Column	81.0	20.0	
Type B			
Row	50.0	50.0	
Column	19.0	80.0	

measure of Type B behavior pattern for this female sample. From Table 34 one observes that a Fisher's exact test reached statistical significance ($p < .02$) indicating that the two instruments were significantly related. The JAS categories of A, X and B were then compared to the SI A, X and B classifications. A kappa statistic of .09 indicated that the two measures were not related. The kappa here may be overcorrecting for chance agreement.

Jenkins Activity Survey component factors. The JAS component factors of Speed and Impatience, Job Involvement and Hard-Driving and Competitive, were compared across Types A, X and B. The means and percentile ranks for each JAS factor are displayed in Table 35. Means in the positive direction and ranks above 50 indicate behavior classification towards the Type A end of the continuum while means in the negative direction and ranks below 50 indicate behavior classification towards the Type B end of the continuum.

Analysis of variance procedures examined each of the JAS components for differences between Types A, X and B. Follow-up t-tests compared each behavior type to another for the components that reached statistical significance. Summary tables of the ANOVA for each JAS component may be found in Table N-10, Appendix N. Summaries of the t-test procedures are shown in Table N-11, Appendix N.

As enumerated in Table N-10, Appendix N, all of the component factors were significantly different between groups: Speed and Impatience F (2,77) = 17.89, $p < .0001$, Job Involvement F (2,77) = 8.97, $p < .0003$, and Hard-Driving F (2,77) = 15.31, $p < .0001$. The means for the JAS factors are shown in Table 35. Follow-up t-tests for Speed and

Table 35

JAS Components by JAS Type A Behavior Pattern

JAS Type A classification	N	Speed and Impatience		Job Involvement		Hard-Driving	
		Mean	Percentile rank	Mean	Percentile rank	Mean	Percentile rank
Type A	45	9.1	80	10.3	85	3.8	65
Type X	21	3.2	65	4.2	65	-4.4	40
Type B	14	-4.3	35	2.5	60	-10.1	15

Impatience demonstrated that Type As were more impatient and hurried than both Type Xs, t (64) = 2.96, $p < .004$, and Type Bs, t (57) = 5.66, $p < .0001$. Type Xs were also more impatient and hurried than Type Bs, t (33) = 3.02, $p < .005$. For Job Involvement t-tests indicated that Type As were more job involved than both Type Xs, t (64) = 3.25, $p < .002$ and Type Bs, t (57) = 3.84, $p < .0003$. Follow-up t-tests for the Hard-Driving and Competitive component demonstrated that Type As were more hard-driving than either Type Xs t (64) = 3.34, $p < .001$, or Type Bs, t (57) = 4.80, $p < .0001$. Type Xs were also more hard-driving than Type Bs, t (33) = 2.34, $p < .02$.

Blood pressure. The three behavior patterns were also compared for differences in systolic and diastolic blood pressure. The blood pressure means for Type A, X and B are listed in Table 36. Analysis of variance compared the three behavior patterns for differences in blood pressure. Summary data for the two ANOVAs are presented in Table N-10, Appendix N. The blood pressures were not significantly different for the three groups.

Table 36

Blood Pressure by JAS Type A Behavior Pattern

JAS Type A classification	N	Systolic blood pressure	Diastolic blood pressure
Type A	45	113.9	76.9
Type X	21	112.7	75.9
Type B	14	113.6	74.3

CHAPTER VI

DISCUSSION

The present research examined employed and unemployed women, aged 30-45, for differences in sex-role orientation, achievement behavior and extent of Type A behavior pattern. Specifically, women employed in high status male-dominated occupations (physicians/lawyers), high status female-dominated occupations (nursing professors), medium status female-dominated occupations (nurses) and unemployed women (housewives) were compared for differences on these variables. The complex design of employed versus unemployed, male versus female-dominated occupations, high versus medium status occupations provided specific groups of women to clarify specific associations between employment status and sex-role orientation, achievement behavior, the extent of Type A behavior pattern and blood pressure.

This study examined a mid-life population of women who were in the process of raising children and/or pursuing full-time careers. Many of the earlier studies of achievement, sex role and Type A examined male and female college undergraduates or older employed males and made inferences from these studies to more mature homemaking and career-oriented women. From comparisons with earlier studies one may conclude that young college women experience more conflict in achievement orientation, are more traditional in sex-role orientation and less Type A than older (30-45) samples of women. Therefore, including the four occupational categories allows more reliable inferences to be made to specific populations of women. The present study also included high status male and female-

dominated occupations instead of just focusing on clerical and unskilled workers in female-dominated occupations. The women in high status occupations are highly skilled much like employed men in previous studies of Type A behavior pattern. In fact Type A appears to be related to the modern occupational career where competitiveness, job involvement, ambitiousness, management of time and hard-driving qualities are rewarded.

Sex-role orientation appears to be influenced by early models of sex-appropriate behavior and socialization experiences. Employed women compared to housewives were expected to be less traditional in sex-role orientation. The housewives were expected to report more feminine sex role characteristics than the employed women who were expected to have adopted a high number of masculine characteristics and were predicted to appear masculine or androgynous in sex role. Sex-role orientation is related to style of achievement behavior in that achievement behaviors appear in areas which are culturally defined as sex-appropriate. Thus, employed women who adopted nontraditional vocational roles were expected to value achievements consistent with their sex-role orientation, such as career-related achievements. Housewives compared to employed women were expected to emphasize more family and affiliation achievements. Recall that Type A behavior is quite prevalent in ambitious, competitive employed men. In the present study Type A was expected to be more prevalent in employed women than in unemployed women, and more prevalent in performers of male-dominated occupational roles than of female-dominated occupational roles.

During the following discussion the Background Information data will be reviewed first. Then the variables of sex-role orientation,

achievement behavior and Type A coronary-prone behavior will be discussed in turn.

Addressing first the background information data, age, marital status and socioeconomic status were expected to be similar for the four groups of women. In fact, the four groups of women participating in this research were similar in age ($\bar{X}$ = 36.7 years). This age sample is more mature in terms of development and life cycle than college women examined in previous studies of achievement behavior, sex-role orientation and Type A behavior pattern. The women are involved in raising children and/or have established themselves in careers. The women were also similar in terms of socioeconomic status, as determined by parents' education and husband's and parents' occupational status. Significant correlations suggested that women with mothers who had more education also had husbands and fathers with more years of education. More years of mother's education was also associated with higher occupational status of father. Thus the measures of socioeconomic status are closely related.

Another factor which might have varied across groups was the education or career of the participants' mothers. However, as above there were no groups differences. The women had mothers with about two years of college education, over half of whom were always full-time housewives. One-third of the mothers were housewives who returned to the work force while the participants were still living at home. Most of these women worked in female-dominated occupations, and only ten mothers pursued full-time careers while their daughters were still living at home. Similarly averaging across groups, the participants' fathers had a little over two years of college. The father's occupational status mean

was 52.4; occupations near this rating include building inspector, retail buyer, service representative, and plant, department store and office managerial positions. A significant correlation demonstrated that older women tended to have fathers with less education.

On the other hand, there were group differences in husband's years of education with husbands of physicians/lawyers having almost three years of graduate school compared to husbands of nursing professors who had less than one year of graduate school. The husbands of women in the other occupational categories had over one year but less than two years of graduate school. The husbands had an average of three more years of college than the participants' fathers. The husbands also had more occupational prestige than the fathers, with a mean of 71.4. Occupations near this rating include career army or air force lieutenant colonel, personnel management, quality control engineer, administrator of medical clinic, and presidential and vice-presidential positions in utility company, banking and produce industry. For the husbands, more years of education was associated with higher occupational status. Also, a significant correlation suggested that older women tended to have husbands with lower status occupations.

In addition, the four occupational categories gave different reasons for currently being in their present line of work. All but one housewife said she was a full-time housewife by choice. Three-fourths of the physicians/lawyers and almost two-thirds of the nursing professors were working by choice. These three occupations seemed more satisfied with their work routines than the nurses. Only one-fourth of the nurses were working by choice, one-fourth out of necessity (usually for financial

reasons) and half for both reasons. Forty percent of the nurses were not married and this may, in part, account for their working largely for financial reasons. One could hypothesize that if these women were married and did not have to work they might self-select out of the work force.

The physicians/lawyers had four years of graduate school education and had significantly more education than the other three groups. The nursing professors had over two years of graduate school and had significantly more education than the nurses and housewives who had four years of college. All of the women had more years of education than either of their parents. The high status occupations also had more years of education than their husbands. A significant correlation suggested that women with higher levels of education were more likely to have husbands with more years of education.

The four groups were also different in terms of marital status. All of the housewives were married; this finding makes sense because a woman would have to have a source of financial support in order to remain at home. All of the married women seemed to have this financial support because occupational status of the husbands was similar for the four groups. For the employed women 60% of the nurses, 70% of the physician/lawyers and 85% of the nursing professors were currently married. Due to the differences in marital status, mean number of children for each occupational category was figured for married women only. The nursing professors had an average of 2.2 children which was significantly larger than the nurses who had an average of one child. The other groups had about two children per family. A significant correlation suggested that the older women were more likely to have more children.

The employed groups all worked an average of 50.4 hours per week, well over the expected 40 hour work week. The housewives were also quite busy with volunteer work. In fact, housewives devoted 10.8 hours per week to community service, PTA, political activities, Junior League and other women's clubs. These women spent significantly more time than the employed women in these non-work activities. They spent three times as much time as the medium status occupation and four times as much time as the high status occupations in volunteer work. The housewives seemed quite responsible in their involvement in community service. Statistically significant correlations suggested that women who devoted more time to volunteer activities were likely to come from a higher socioeconomic status class.

Thus, the four groups of women were similar in age, and socioeconomic status as determined by mother's and father's education and by husband's, mother's and father's occupational status. On the other hand, there were group differences in husband's education, participant's education, marital status, whether a woman was working by "choice, necessity or for both reasons," number of children and hours per week spent in volunteer activities.

Let us continue the discussion by addressing the sex-role orientation measures. Employed women ($\bar{X}$ = 195.5) and housewives ($\bar{X}$ = 187.4) appeared similar in sex-role orientation; therefore, employment status does not appear to differentiate the two groups with respect to Brogan and Kutner's Sex-Role Orientation scale. In comparison to the results presented in Brogan and Kutner's (1975) Atlanta, Georgia, study, the present sample appeared less traditional in sex-role orientation. Brogan

and Kutner compared female graduate school nurses ($\bar{X}$ = 186.8) to female undergraduates ($\bar{X}$ = 178.2), male undergraduates ($\bar{X}$ = 162.6), married females aged 23-42 ($\bar{X}$ = 166.4) and married males aged 24-45 ($\bar{X}$ = 160.3) for differences in sex-role orientation. Brogan and Kutner found that the males compared to females were significantly more traditional in sex-role orientation when compared within their respective undergraduate and married sample. The researchers also observed that the younger participants were most nontraditional in sex-role orientation while older persons were most traditional in sex-role orientation. The researchers found significant differences in age and sex-role for males and almost a significant difference for females. The present sample of employed women are more nontraditional than Brogan and Kutner's youngest sample of women. Thus the notion that older persons are generally more traditional than younger persons is not supported in the present study. One may also speculate that Brogan and Kutner's sample is representative of a more traditional southern culture where stereotypes of chivalrous gentlemen and southern belles are well ingrained in the culture. These expectations for male and female behavior are known by virtually all members of the culture. One also notes that Brogan and Kutner's 1975 sample would now be in the 30-45 year age group. The 1975 sample may have simply maintained their less traditional sex-role orientation and this may be reflected in the current nontraditional sex-role orientation endorsed by the present 1983 sample.

Brogan and Kutner's Sex-Role Orientation scale did not differentiate between employed and unemployed women. One wonders if this measure is evaluating sex-role stereotypes more relevant during the mid 1970s. The

stereotype of the "traditional" woman staying at home, taking care of children, being subservient to men, and engaging only in sex-appropriate behaviors may have appeared less conservative and less extreme to the 1975 samples thus allowing classification along a wide sex-role continuum from traditional to nontraditional. In the present study the sample strongly endorsed a nontraditional sex role as defined by this 1975 measure. The test seems to present an out-dated stereotype of the "traditional" orientation and this stereotype is rejected by both the employed women and homemakers.

The following conclusions can be drawn from the sex-role orientation data. The present sample compared to Brogan and Kutner's sample do not agree that a woman's place is just in the home while the man's place is in the work force. The present sample also does not endorse the traditional sex-based power structure which is exemplified by women always being in a one-down position to men in both the family and work spheres. That is, the present sample asserts that women should be allowed to hold positions of authority over other men and women if the woman is qualified for the job. In the family situation, the women state that both spouses should participate in decision making such as buying a car or home. The present sample, compared to Brogan and Kutner's sample, appear more flexible in their attitudes towards men being employed in female-dominated occupations (nursing, library science) and women being employed in male-dominated occupations (welding). The present sample is also less traditional in their attitudes about appropriate sex-role socialization of male and female children. That is, they would be more likely than Brogan

and Kutner's sample to let their sons play with dolls and their daughters participate in Little League softball.

A need exists for a revised sex-role orientation scale that can differentiate between current attitudes regarding traditional and non-traditional orientations. The author believes that socialization experiences involving family, peers, teachers and the community are in general encouraging more achievement oriented behaviors in women and are less rigid in encouraging only sex-appropriate behaviors. However, while the culture is gradually endorsing less traditional sex roles for both males and females, the sex roles encouraged by individual families and sectors of the community continue to vary quite a bit. Thus, a sex-role measure could be developed to assess the differences in sex-role orientation between women with such obvious differences as employment status.

The sex-role orientation of these women was also assessed with the BSRI. As hypothesized the employed women appeared significantly more masculine or androgynous in sex-role than the housewives who appeared significantly more feminine in sex-role. The BSRI appears to differentiate between employed and unemployed women primarily on the Masculinity dimension. This dimension measures the endorsement of behaviors and characteristics that have typically been ascribed as appropriate for men. The BSRI is recommended for use in future studies of sex role and appears useful in evaluating the extent to which individuals adhere to idealized standards of masculinity and femininity.

In the present sample 23% of the employed women and 20% of the housewives were classified as masculine (sex-reversed) compared to 12.4% of the college normative sample (Bem, 1981). One speculates that for the

more mature women sex-role behavior has stabilized by the time a person is 30-45 years old compared to 18-22 year old women still in the process of developing a system of values, and struggling with self-identity issues and role expectations.

The employed women were 35.0% androgynous compared to 10.0% for the unemployed women and 30.3% of the college normative sample. The career oriented women deviate from the traditional feminine role and have redefined their role to include behaviors appropriate to both sexes. Masculine characteristics are valuable in the work place where the ability to be competitive, ambitious and assertive contribute to one's success. The ability to be compassionate, empathic, and sensitive to the feelings of others will also contribute to one's success in the work sphere. The finding that more employed women than housewives are androgynous agrees with Rand's (1968) examination of career and home-making oriented college freshmen women. She found that the career group scored higher on both masculine and feminine characteristics as described in the American College Survey, a descriptive inventory of ideas, attitudes and experiences.

The housewives seemed more comfortable in restricting their behavior to the cultural definitions of sex-appropriate behavior. The housewives were 45% feminine sex-typed compared to 21.7% for the employed women and 39.4% for the normative sample. These women seem motivated to keep their behavior consistent with an idealized image of femininity, a goal that is accomplished by selecting behaviors and attributes that enhance the feminine image. In fact, the feminine sex-typed women seem similar to Bem and Lenney's (1976) sex-typed college students who preferred an

activity or occupation just because of its stereotype as sex-appropriate. The researchers found that sex-typed individuals experienced the most negative feelings and discomfort, and felt worst about themselves when performing cross-sex behaviors. They tended to avoid behaviors and attributes that violated the sex-typed image. Unfortunately for the feminine sex-typed individual, there are situations that could best be handled by being forceful, competitive or independent. The sex-typed individuals are less adaptable to situations because they limit their repertoire of behaviors to include only feminine behaviors.

When one looks at the overall group means, the employed women endorsed slightly more feminine traits than the unemployed women but the differences were nonsignificant. The employed women also endorsed a relatively large number of masculine characteristics while the unemployed women endorsed relatively few masculine traits. The employed group as a whole appeared androgynous in sex role while the housewives appeared undifferentiated in sex-role. However, if the housewife group had scored .01 point higher on the Femininity mean, the housewife group would have been classified as feminine in sex-type.

Addressing next the achievement measures, Stein and Bailey (1973) found that achievement behaviors appear in areas which are culturally defined as sex-appropriate. Thus, women adopting a traditional sex-role would be likely to value achievements in areas such as social skills and rewarding interpersonal relationships. Both Alper (1973) and Peplau (1976) have found that sex-role orientation is an important factor in predicting achievement behavior. The finding that employed women are more androgynous or masculine in sex-role than housewives lays the

foundation for the notion that these two groups of women achieve in a manner consistent with their sex-role orientation.

The kinds of achievements listed on the Personal Accomplishments Survey are helpful in understanding what kinds of achievements women value as important. Achievements have typically been described for the male population in terms of achieving power, status or money. Yet housewives have enumerated achievements in interpersonal relations and family or domestic areas that they value as important. The employed women appear similar to the male population in that they emphasize achievements such as educational attainments, work competence, financial independence, job mobility and work satisfaction.

The employed women reported significantly more career achievements than the housewives for the past year, college to present time period and for their whole life. In turn, the housewives reported significantly more family-affiliation achievements than the employed women for the college to present and whole life time periods. For the past year, both groups put an equal emphasis on family achievements.

The similar emphasis on family achievements can be explained by the fact that housewives emphasized other areas of achievement besides family-affiliation. The housewives listed significantly more individual growth achievements than the physicians/lawyers and significantly more "other" accomplishments than the nursing professors. The housewives emphasized developing a sense of autonomy, self-confidence, self-acceptance, physical health and religious commitment. Looking at the "other" categories, the housewives listed more community service and competitive activities/hobbies as accomplishments than the employed

women. As stated previously, the housewives devoted almost 11 hours per week to volunteer activities including Junior League, PTA, political activities and other women's organizations. The housewives also listed more sports, music and art accomplishments as important achievements accomplished during the past year.

The physicians/lawyers, nursing professors and nurses all listed significantly more career achievements for the past year than the housewives. This makes sense because the housewives are not employed outside the home and have few opportunities for work-related achievements. The career achievements reported by the housewives were primarily education achievements (obtaining a degree). For the college to present time period the physicians/lawyers and nursing professors reported significantly more career achievements than the housewives. These high status occupations appear heavily invested in pursuing graduate studies, competing for faculty positions and/or residencies and developing their careers. The nurses appear least invested in their work of all the employed women. Recall that significantly fewer nurses were working by choice (25%) compared to the other occupations. For the whole life time period the nursing professors reported significantly more career achievements than the housewives and nurses. This finding seems to reflect an interest, pursuit and pride in job responsibility, career advancement, educational and intellectual achievements, and making money. One observes that high status women are much like career-oriented men in that they devote much of their energy to the pursuit of status, power and money. These women have accomplished long range goals, such as receiving

advanced degrees, and continue to take pride in meeting career goals in the present work place.

The housewives listed significantly more family-affiliation achievements than each of the employed occupations for the college to present and whole life time periods. These kinds of achievements are consistent with an expressive and communal orientation involving a concern for the welfare of others, harmony of the group and relationship between oneself and others. Veroff and Feld (1970) find that for less educated women "having children" seems to be a satisfying achievement goal, while for more educated women the "process of child-rearing" seems to be an arena for achievement goals. The housewife population tends to emphasize teaching and providing emotional support in family relationships along with the event of bearing children. The researchers also find that women high in achievement motive feel particularly restricted by marriage and make child-rearing an achievement goal in itself. One notes that the homemakers also listed significantly more individual growth achievements than the physicians/lawyers and significantly more "other" achievements than the nursing professors for the past year. Thus the homemakers compete, accomplish and value achievements that are feminine sex-typed and consistent with a traditional sex-role orientation.

The PAS is a valuable instrument for assessing achievement behavior in both employed and unemployed samples. The open-ended format allows the participants to report a wide spectrum of accomplishments. As hypothesized the housewives reported significantly more family-affiliation achievements than career achievements for all of the time periods examined. The employed women reported significantly more career

achievements than family-affiliation achievements for the past year and college to present time periods. However, the employed women did not report significantly more career than family-affiliation achievements for their whole lifetime. Both groups of women put an equal emphasis on family achievements, achieving and maintaining relationships with friends, significant males and parents, and competent functioning in the domestic sphere. Again the conclusion can be drawn that the career oriented women have redefined their role to include and value behaviors that have been in the past judged to be appropriate for one sex or the other. The employed women seem to express achievement in both career and family-affiliation activities. The present study supports the notion that women value achievement behaviors for themselves that are consistent with their image of appropriate sex-role behaviors. Thus while housewives achieve through family and home activities, employed women achieve in both occupational and domestic spheres.

Continuing on to the other achievement measure, it was expected that high status employed women would exhibit more Assertive Competence Motivation than medium status employed women who would in turn exhibit more Assertive Competence Motivation than the housewives. The results demonstrated that the occupational categories were not significantly different on this measure. However, correlations between sex-role orientation and achievement behavior and the Masculinity dimension of the BSRI and achievement suggested that a more nontraditional sex-role orientation was associated with more Assertive Competence Motivation.

This "assertive competence motivation" factor was derived from Veroff, McClelland and Ruhland's (1975) study of black, white, male and

female adults aged 18-49. This factor reflects a high interest in autonomy and power and a positive interest in competence. This orientation to achievements reflects the desire to see oneself as successfully performing valued achievement activity in the society. This motivation depends on being socially evaluated and reacted to, and also depends on some aspects of competition with general normative standards rather than on an immediate reference group.

Veroff et al. found that women are lower in assertive competence motivation than men. The researchers suggested that the women are less interested than men in performance that requires assertiveness via power, autonomy and achievement, especially at the cost of affiliation or acceptance by others. The employed women who were more nontraditional, masculine or androgynous in sex-role were expected to score higher on this measure because they have adapted to the work place where independence, competitiveness and leadership are highly valued behaviors. There were no group differences on this measure.

This factor was one of five factors derived from a larger battery of tests. Unfortunately, there are no norms for the assertive competence motivation factor. Perhaps comparisons with lower socioeconomic status females and male participants would yield informative and discriminative results.

Future use of this measure with college educated female samples is not recommended. Veroff found Assertive Competence Motivation to be a strong predictor of more years of education in both men and women. Yet, in the present study the four occupational groups differed significantly in years of education and did not differ on Assertive Competence

Motivation scores. However, all of the participants had at least a college degree and perhaps a comparison with less educated individuals would demonstrate the previously observed relationship between this measure and years of education.

Type A behavior pattern was also examined. Mettlin (1976) finds that Type A behavior pattern is integral to success in the modern occupational career. Type A behaviors such as amibitiousness, competitiveness and assertiveness lead to higher status, more responsibilities and higher salaries in the work sphere. Thus, employed women were expected to pursue success in a manner much like employed Type A men, and employed women were expected to be more Type A than housewives.

It was hypothesized that women in male-dominated occupations would appear more Type A than employed women in female-dominated occupations, who in turn would appear more Type A than housewives. As stated earlier, this sample was skewed toward the Type A end of the behavior pattern continuum with 90% of the housewives and physicians/lawyers, and 75% of the nurses and nursing professors classified as Type A as determined by the Structured Interview. Thus, the hypothesis was not supported by the Structured Interview data.

The hypothesis was in part supported by the JAS Type A data. Women in male-dominated occupations exhibited a more extreme manifestation of the Type A coronary-prone behavior pattern than the employed women in female-dominated occupations. The JAS Type A scores for the physicians/lawyers (10.5, 85th percentile) were significantly higher than the Type A scores for the nursing professors (4.5, 65th percentile), nurses (3.9, 60th percentile) and housewives (1.6, 55th percentile). However, the

employed female-dominated occupations were not significantly more Type A than the housewives. While the high status male-dominated occupation appeared the most Type A of all the groups, no significant differences were found between the four occupations on the other JAS component scales. Mettlin found that JAS Type A scores are significantly related to rapid career achievement and career mobility. Thus, these women seem similar to successful Type A men in that they exhibit behaviors that lead to achievement and recognition in the work place.

The results of the JAS are similar to the JAS scores obtained for female employed Type As (physicians, lawyers, executives) and unemployed Type As and Bs (housewives) aged 25-55 examined by Lawler, Rixse and Allen (1983). Lawler et al.'s sample and the present sample are much more Type A than female samples reported elsewhere. For example, Waldron, Hickey, McPherson, Butensky, Gruss, Overall, Schmader and Wohlmuth (1980) reported that ambitious female undergraduates, half of whom planned on obtaining doctoral degrees had mean Type A scores of .05 (50th percentile) while Waldron, Zyzanski, Shekelle, Jenkins and Tannebaum (1977) reported Type A scores for female undergraduates to be -4.3 (40th percentile). As mentioned earlier the present older samples may be more Type A than the younger samples of women because the older women are heavily invested in their career achievements and/or have more family responsibilities (time pressures) to attend to. Also, most of the employed women are androgynous or masculine in sex-role and may strive to accomplish varied sorts of activities during each day. Also, the younger age samples may be more traditional in sex-role orientation and may feel

uncomfortable exhibiting male behaviors such as competitiveness, ambitiousness and aggressiveness typically observed in Type A behavior.

The pressures of employment may also be associated with increased blood pressure. As more women enter the work force and adopt a less traditional sex-role their risk for CHD may also increase. However, the employed women did not have significantly higher blood pressure scores than the housewives. The total sample obtained a mean of 114/76, a nearly ideal reading. As expected systolic and diastolic blood pressure were significantly correlated.

Shekelle, Schoenberger and Stamler (1976) found higher blood pressure positively related to JAS Type A scores in older women (aged 45-64) but not related to JAS Type A scores in younger women (aged 25-44), after controlling for age, weight and socioeconomic status. Perhaps the young age sample has not yet manifested hypertension or other observable CHD. The older age group included postmenopausal women, who, no longer protected from heart disease, are known to be more at risk for heart disease than premenopausal women. Diastolic blood pressure was somewhat associated with JAS Job Involvement while hours worked per week was somewhat associated with systolic blood pressure. Perhaps these correlations reflect a trend common to Type A individuals: devotion to work and long hours which may contribute to higher blood pressure.

Type A behavior was also examined by the Structured Interview. In the present study sample 30% of the women were classified as Type A1, 52% were classified as Type A2, and 18% were classified as Type B as determined by Rosenman and Friedman's Structured Interview. When the sample was divided according to JAS Type A scores, 56% were classified as

Type A, 26% were classified as Type X, and 18% were classified as Type B. The Western Collaborative Group Study (WCGS) population distribution for Type A behavior pattern in males was 10% A1s, 40% A2s, 40% B3s and 10% B4s. The present sample was skewed heavily towards the Type A end of the continuum. There are several explanations that could in part account for this skewed distribution. Researchers (Waldron et al., 1977) find that JAS Type A scores peak at about ages 30-45 for employed women, the same age range sampled in the present study. Three-fourths of the present sample are currently employed and Waldron et al. suggest that Type A women are more likely than other women to seek paid employment. These women tend to remain in the competitive and hurried, yet rewarding, work place and are more likely than Type B women to remain employed once they have begun working.

The recruitment procedure for selecting housewives in this study may in part account for the high incidence of Type A behavior pattern among them. The homemakers were selected from lists of active members from various women's organizations. Thus, the housewife sample was selected from homemakers already actively involved in volunteer activities within the community. The population of housewives participating only in home-related activities was not well represented in this study. Thus, it appears likely that the more Type B individuals were left out of the sample.

Women in this age range have greater family responsibilities than younger women in their 20s. The greater family responsibilities may in part account for the manifestation of Type A behavior. The married working women have at least one or two children and probably experience

greater time pressures to perform well at work and also manage family responsibilities. Recall from the previous discussion that for the whole life time period the employed and unemployed women put an equal emphasis on family achievements and competent functioning in the domestic sphere. The career oriented women appear to invest a large amount of energy in both career and family responsibilities.

Researchers (Waldron et al., 1977; Shekelle et al., 1976; Waldron, 1978) report that individuals with more education and higher occupational status are more Type A. This sample is highly educated compared to normative samples. These women have at least a college degree, and more years of education was found to correlate with higher JAS Type A, Speed and Impatience and Job Involvement scores. These women belong to a higher socioeconomic status class than normative samples. The employed women are working in jobs with high or medium occupational prestige.

One also speculates that living in the fifth largest city in the United States with increased life stresses such as crime, traffic congestion, humid hot weather, air pollution and population density contributes to the enhancement of Type A behavior pattern. There is also the possibility that Type As (or their husbands) self-select into competitive, fast-paced environments where status, larger salaries and more responsibility can be attained. In fact, the majority of the participants were not native to Houston.

Independent of the four occupational categories, it was of interest to examine groups of women defined as Types A, X and B behavior pattern. The sample was divided into Types A, X and B as determined by the JAS Type A scale. Significant differences between the three behavior

patterns were observed on all of the JAS component factors. The first component, Speed-Impatience, deals with the time urgency and threshold for irritability revealed in the style of behavior of the Type A person. On this factor Type As (9.1, 80th percentile) were significantly more impatient and hurried than either Type Xs (3.2, 65th percentile) or Type Bs (-4.3, 35th percentile). The second component Job Involvement, expresses the degree of the demands of and dedication to occupational activity. The three groups also differed on this factor. The Type As (10.3, 85th percentile) appeared more job involved than either the Type Xs (4.2, 65th percentile) or Type Bs (2.5, 60th percentile). This amount of investment in work activities is also reflected in the finding that Type Bs work significantly fewer hours per week (42.5 hours) than Type As (53.4 hours). Recall that high scores on Job Involvement were associated with more hours worked per week, more years of education and higher scores on all of the JAS component factors. The third component, Hard-Driving and Competitive, involves perceptions of oneself as being hard-driving, competitive and serious. On this factor Type As appeared more hard-driving (3.8, 65th percentile) compared to both Type Xs (-4.4, 40th percentile) and Type Bs (-10.1, 15th percentile). Even Type Xs were more hard-driving than Type Bs.

The relationship between the overall Type A factor and the other JAS components suggest that the global measure of Type A is associated with the other JAS factors for women as well as men. In the present study the JAS Type A score was positively correlated with JAS Speed and Impatience (.65), JAS Job Involvement (.42) and JAS Hard-Driving and Competitive (.62). These correlations appear substantially greater than correlations

reported for men in the WCGS. Jenkins, Zyzanski and Rosenman (1971) computed the correlations of the 1966 version of the JAS Type A scores with Speed and Impatience (.50), Job Involvement (.23) and Hard-Driving (.40) components. The researchers conclude that these findings imply that all three of these factor traits are substantially and stably related to Type A and that not one of them alone accounts for the behavior type. One observes that in the present sample Type A scores are more strongly associated with the component factors than for men. This perhaps means that the other JAS component factors are not as discriminating for women as they are for men.

In this study the JAS Type A score was also significantly correlated with hours worked per week (.38). These findings are similar to Waldron et al.'s (1980) study of undergraduate females which found Type A significantly correlated with more hours devoted to classes, studying, college activities, employment and higher grade point. The researchers also found that Type A was correlated with involvement in academic activities and success but not with other types of activity or social success. In the present study more hours worked per week was also associated with more years of education, higher JAS Job Involvement and JAS Hard-Driving scores. Thus the more educated, competitive and ambitious women appear to work longer hours striving to meet vocational pressures.

The JAS Type A score was also significantly correlated with more education. Follow-up tests demonstrated that Type As had significantly more years of education (18.2 years) than either Type Xs (17.2 years) or Type Bs (16.9 years). More years of education was associated with higher

Speed and Impatience and Job Involvement factors and less time devoted to volunteer activities.

The participants were also compared on sex-role classification as determined by the Bem Sex-Role Inventory for differences in JAS Type A scores. Significantly more Type B women were classified as feminine in sex-type (77.7%) while more Type A women were classified as androgynous and masculine in sex-role (77.5%). Again the conclusion can be drawn that Type A women have adopted behaviors that are male sex-typed such as being competitive, ambitious, self-reliant and forceful. These behaviors are adaptive in the work place and often lead to success and recognition. The Type B women display more feminine and other-oriented behaviors such as being sensitive to the needs of others, soft-spoken, tender and compassionate. The androgynous women are endorsing an equally high number of both masculine and feminine sex-typed behaviors.

The JAS and SI behavior classifications were also compared in order to examine the agreement between these two methods of determining Type A in the population of women. The Type A behavior classifications as determined by the Structured Interview were compared to the JAS Type A classifications. The intermediate SI and JAS behavior patterns were unreliably classified by the other measure. In order to clarify the nature of the JAS and SI agreement, the two intermediate behavior patterns, JAS Type X and SI Type A2, were deleted. The SI classification Type A correctly identified JAS Type As 94% of the time. However, the SI Type B classification only agreed half of the time with JAS classifications. Turning next to the JAS behavior classifications, both Type As and Bs were in agreement with the SI about 80% of the time. While JAS

Types A and B and SI Type As were correctly identified at least 80% of the time, the SI Type B determination was only in agreement with the JAS 50% of the time. Thus, the JAS appears to be a more reliable measure of Type A behavior pattern for this female sample.

Although the Type A measures differentiate the manifestation of Type A behavior in males, the Structured Interview does not appear as useful for females. It is thought that women have been socialized to inhibit intense drives evidenced in Type A behavior and display less competitive and aggressive behaviors than men. The Structured Interview is a tape-recorded interview evaluated for loud and explosive speech, rapid and accelerated speech, hostility and competition and control for the interview. Classification according to the Structured Interview does not appear to clearly distinguish Type A behavior among this sample of women. As stated previously, the SI classifications do not closely agree with the JAS classifications. Future research in gender differences on these measures are needed with particular emphasis on evaluating the usefulness of the Structured Interview.

This research study contributes to the present literature by examining the variables of sex-role orientation, achievement behavior, Type A behavior pattern and blood pressure at one time. These variables are worthy of further examination in samples of women with established families and/or careers. While the Bem Sex-Role Inventory is a useful measure of sex role, Brogan and Kutner's Sex-Role Orientation scale did not differentiate the groups according to employment status. The Personal Accomplishments Survey is an informative measure that identifies achievements which individuals value and accomplish. Both Brogan and

Kutner's SRO scale and Veroff, McClelland and Ruhland's Assertive Competence Motivation questionnaire are not recommended for future use with mid-life, college educated, female samples. The Jenkins Activity Survey, compared to the Structured Interview, appears to be the most discriminative measure of Type A behavior in the present female sample. Future research in gender differences examining the JAS and particularly the SI are needed.

Implications

This study suggests several implications relating to women and their changing role in our society. Women currently achieve in both domestic and occupational spheres. Sparacino (1979) recognizes that increasing industrialization and urbanization have created the cultural norms and values that promote an overreaction to challenge and stress. Type A behavior emerges as the response of a characterologically predisposed person to a challenging situation. As women adopt less traditional roles the stress of both working outside the home and rearing children may become increasingly associated with the development of Type A behavior. And staying at home does not appear to prevent women from manifesting Type A behavior pattern.

Many women have adopted behaviors typically described as more appropriate for men. Women who choose to pursue both traditionally masculine and traditionally feminine activities have been ignored in early examinations of sex role as attention was focused on the feminine sex-typed traditional woman. Deviation from the traditional feminine stereotype could be congruent with differences as assessed by measures of

ego strength and family of origin patterns such as parental attitudes towards child rearing, parental sex-role orientation and encouragement of achievement behaviors.

For example, Gump (1972) utilized Barron's Ego Strength scale to examine employed and unemployed women. She found that the employed women exhibited higher ego strength and were more aware of their needs, had a capacity to plan realistically in terms of them and had defined goals. The unemployed women showed lower ego strength and were more inhibited, more dependent and less open about their feelings and thoughts. Purposiveness, resourcefulness and self-direction may be inconsistent with the adoption of a role limited to traditional, other-oriented goals and satisfactions.

Addressing next attitudes toward childrearing, Stein and Bailey (1973) find that moderate levels of warmth and nurturance along with permissiveness is associated with independence in children. Kriger (1972) finds that restrictiveness, overprotectiveness, and encouragement to be quiet, nonaggressive, noncompetitive and obedient are childrearing practices that do not promote achievement behavior in women.

The sex-role orientation of parents of employed women would be expected to be nontraditional. These parents would probably appear flexible in sex-role socialization so that if their daughter showed an interest in traditionally masculine activities the parents would not discourage this activity simply because it was sex-inappropriate. These parents would value traits for their daughter such as independence, assertiveness, ambitiousness and achievement. They would encourage achievement behavior in areas traditionally defined as masculine such as

math, science and sports. Participation in these activities promotes competitiveness, leadership and scholastic achievement which facilitates entrance into male-dominated occupations such as engineering and medicine. Future studies could develop instruments to assess these variables of interest. These kinds of studies would help answer the question of why some women prefer to become housewives while others choose to work outside the home.

Achievement behavior in women is also an important topic. As American society tries to support equal career opportunities for men and women one wonders how these changes will affect the family unit as we know it. Baruch (1976) finds that girls with higher self-perceptions of their competence have received both support for and modelling of such self-images from their mothers. More working women will serve to encourage continued career-oriented achievement in women. As women try to live up to the expectation of the "supermom" (a woman who works outside of the home and then comes home to manage the family) one wonders how this behavior will affect the incidence of Type A behavior. These roles in transition could possibly be more stressful than the traditional male and female roles where at least each individual knew what was expected of him or her. Comparisons of traditional and nontraditional men and women in terms of differences in Type A behavior pattern could examine this question.

Past studies suggest that women have more valvular heart disorders as compared to men who have a higher incidence of arteriosclerosis. As the pressures and complexity of living continue to increase more women will probably manifest the Type A behavior pattern. It is predicted that

as women continue to adopt a lifestyle more similar to men's, their incidence of Type A and its disease process will increase. Type A measures developed on a male sample need to be further examined for reliability and validity as measures of Type A in women. A longitudinal study similar to the Western Collaborative Group Study would be appropriate, examining women over a ten year period. Another valuable study would be to assess the variables examined in the present research in a large company as women enter and leave the work force.

Women appear protected from some symptoms of CHD (such as higher blood pressure) due to premenopausal hormonal levels. A further question is in what ways do postmenopausal Type A women manifest CHD. This could be assessed in a longitudinal study of blood pressure, CHD, psychological factors, Type A behavior and social factors (family/job involvement). Research on psychological factors show that heart patients report high levels of anxiety, depression and low levels of denial as determined by the MMPI subscales of anxiety, depression, hypochondriasis and hysteria. Heart patients compared to the normal population also appear to score higher on scales of somatization (the tendency to translate conflict and affect into bodily symptoms). A study comparing 45-55 year old Type A men and postmenopausal women would be of interest.

Waldon (1976) reports that in the United States mortality due to heart attacks, strokes and heart disease is 60% higher for males than for females. Forty percent of the excess male mortality is due to arteriosclerotic heart disease, primarily because men smoke cigarettes more and because they more often develop the Type A behavior pattern. Death rates for arteriosclerotic heart disease, which is primarily CHD

are twice as high for men as for women. As women adopt more masculine behavior patterns such as the Type A behavior pattern, drinking more, smoking more, exercising less and assuming moderately high levels of responsibility in the occupational sphere, their longevity may become similar to men's. Thus, changing career patterns for women may have significant effects on life span differences between men and women. One continues to wonder what differences occur between men and women in the development of Type A behavior and the role of biological, psychological, and socialization variables in the etiology of Type A behavior.

Conclusions

The present sample rejected the stereotype of the "traditional" sex-role orientation as determined by a sex-role orientation scale developed almost a decade ago. However, the employed women compared to the homemakers endorsed a high number of both traditionally masculine and traditionally feminine characteristics while the homemakers endorsed mainly traditionally feminine characteristics. The women tended to achieve in areas consistent with their image of appropriate sex-role behavior; employed women valued and accomplished achievements in both domestic and occupational spheres while housewives achieved in family and home areas. This sample is predominantly Type A, and staying at home may not protect a woman from developing the coronary-prone behavior pattern. The sample did not exhibit elevated blood pressure levels, although most of the women were Type A. The manifestation of Type A and the development of coronary heart disease in women may be somewhat different from the manifestation of Type A and the development of coronary heart disease in men.

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APPENDICES

APPENDIX A

OCCUPATIONAL PRESTIGE RATINGS

Table A-1

Occupational Prestige and the Percent of Women Employed in Each Occupation

Occupation	Occupational prestige rating	% of Women employed in occupation
Physician	87.14	07
Lawyer	86.96	04
Nursing professor	86.63	91
Registered nurse	46.62	98

APPENDIX B

BROGAN AND KUTNER'S SEX-ROLE ORIENTATION SCALE

Code Number:

DIRECTIONS: The following is a list of statements. I would like you to indicate, on a scale from 1 to 6, how much you agree or disagree with each statement. Please do not leave any statements blank.

Write a 1 if you strongly disagree.
Write a 2 if you moderately disagree.
Write a 3 if you disagree more than agree.
Write a 4 if you agree more than disagree.
Write a 5 if you moderately agree.
Write a 6 if you strongly agree.

1	2	3	4	5	6
strongly disagree	moderately disagree	disagree more than agree	agree more than disagree	moderately agree	strongly agree

____ 1. It is more important for a wife to help her husband's career than to have a career herself.

____ 2. The idea of young girls participating in Little League baseball competition is ridiculous.

____ 3. The relative amounts of time and energy devoted to a career on the one hand, and to home and family on the other hand, should be determined by one's personal desires and interests rather than by one's sex.

____ 4. It is more important for a woman to keep her figure and dress becomingly than it is for a man.

____ 5. The old saying that "a woman's place is in the home" is still basically true and should remain true.

____ 6. A woman should refrain from being too competitive with men and keep her peace rather than show a man he is wrong.

____ 7. A woman whose job involves contact with the public, e.g., salesperson or teacher, should not continue to work when she is noticeably pregnant.

____ 8. The husband should take primary responsibility for major family decisions, such as purchase of a home or car.

____ 9. In groups that have both male and female members, it is appropriate that top leadership positions be held by males.

____ 10. Unless it is economically necessary, married women who have school-aged children should not work outside the home.

____ 11. If there are two candidates for a job, one a man and the other a woman, and the woman is slightly better qualified, the job should nevertheless go to the man because he is likely to have a family to support.

1	2	3	4	5	6
strongly disagree	moderately disagree	disagree more than agree	agree more than disagree	moderately agree	strongly agree

____ 12. Marriage is a partnership in which the wife and husband should share the economic responsibility of supporting the family.

____ 13. A woman should not accept a career promotion if it would require her family to move and her husband to find another job.

____ 14. A married woman who chooses not to have children because she prefers to pursue her career should not feel guilty.

____ 15. Unless it is economically necessary, married women who have preschool-age children should not work outside the home.

____ 16. It is generally better to have a man at the head of a department composed of both men and women employees.

____ 17. A husband should not feel uncomfortable if his wife earns a larger salary than he does.

____ 18. It is all right for women to hold local political offices.

____ 19. A male student and a female student are equally qualified for a certain scholarship; it should be awarded to the male student on the grounds that he has greater "career potential."

____ 20. The use of profane or obscene language by a woman is no more objectionable than the same usage by a man.

____ 21. It is certainly acceptable for boys, as well as girls, to play with dolls.

____ 22. Girls should primarily be counseled to enter "feminine" vocations such as nursing, public school teaching, library science, etc.

____ 23. Women should not feel inhibited about competing in any form of athletics.

____ 24. Parents should encourage just as much independence in their daughters as in their sons.

____ 25. Women should be able to compete with men for jobs that have traditionally belonged to men, such as telephone lineman.

____ 26. It is O.K. for a wife to retain her maiden name if she wants to.

____ 27. There is no reason why a woman should not be president of the United States.

____ 28. Career education for boys should have higher priority with parents and teachers than career education for girls.

____ 29. Even though a wife works outside the home, the husband should be the main bread-winner and the wife should have the responsibility for running the household.

1	2	3	4	5	6
strongly disagree	moderately disagree	disagree more than agree	agree more than disagree	moderately agree	strongly agree

____ 30. In elementary school, girls should wear dresses rather than slacks to school.

____ 31. It is acceptable for a woman to become a member of the church clergy.

____ 32. It is acceptable for women to hold important elected political offices in state and national government.

____ 33. It is not a good idea for a husband to stay home and care for the children while his wife is employed full-time outside the home.

____ 34. The only reason girls need career education is that they may not marry or remain married.

____ 35. There is no particular reason why a man should always offer his seat to a woman who is standing on a crowded bus.

____ 36. Men should be able to compete with women for jobs that have traditionally belonged to women, such as telephone operator.

APPENDIX C

BEM'S SEX-ROLE INVENTORY

Code Number:

DIRECTIONS: On the next page you will find listed a number of personality characteristics. I would like you to use those characteristics to describe yourself, that is, I would like you to indicate, on a scale from 1 to 7, how true of you each of these characteristics is. Pleae do not leave any characteristic unmarked.

EXAMPLE: sly

Write a 1 if it is never or almost never true that you are sly.
Write a 2 if it is usually not true that you are sly.
Write a 3 if it is sometimes but infrequently true that you are sly.
Write a 4 if it is occasionally true that you are sly.
Write a 5 if it is often true that you are sly.
Write a 6 if it is usually true that you are sly.
Write a 7 if it is always or almost always true that you are sly.

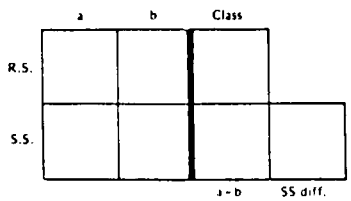
Thus, if you feel it is sometimes but infrequently true that you are "sly," never or almost never true that you are "malicious," always or almost always true that you are "irresponsible," and often true that you are "carefree," then you would rate these characteristics as follows:

Sly	3
Malicious	1
Irresponsible	7
Carefree	5

1	2	3	4	5	6	7
Never or almost never true	Usually not true	Sometimes but infrequently true	Occasionally true	Often true	Usually true	Always or almost always true

*

Defend my own beliefs	Adaptable	Flatterable
Affectionate	Dominant	Theatrical
Conscientious	Tender	Self-sufficient
Independent	Conceited	Loyal
Sympathetic	Willing to take a stand	Happy
Moody	Love children	Individualistic
Assertive	Tactful	Soft-spoken
Sensitive to needs of others	Aggressive	Unpredictable
Reliable	Gentle	Masculine
Strong personality	Conventional	Gullible
Understanding	Self-reliant	Solemn
Jealous	Yielding	Competitive
Forceful	Helpful	Childlike
Compassionate	Athletic	Likable
Truthful	Cheerful	Ambitious
Have leadership abilities	Unsystematic	Do not use harsh language
Eager to soothe hurt feelings	Analytical	Sincere
Secretive	Shy	Act as a leader
Willing to take risks	Inefficient	Feminine
Warm	Make decisions easily	Friendly



*

APPENDIX D

PERSONAL ACCOMPLISHMENTS SURVEY

Code Number:

Researchers have found that individuals achieve in numerous and unique ways. You will be asked to list numerous personal accomplishments. You may list the same accomplishment from section to section if it seems that important to you.

SECTION 1. Think of five achievements that you have accomplished over the past year. Briefly list them in order of the most personal importance to you.

more importance 1.

2.

3.

4.

less importance 5.

SECTION 2. Now think back to your college years (about ages 18-22). Consider the time frame between being in college and the present. Think of five achievements that you have accomplished from the time you were in college all the way to the present time period. Briefly list them in order of the most personal importance to you.

more importance 1.

2.

3.

4.

less importance 5.

SECTION 3. Now think back over your whole life experience including childhood and adolescence. Think of five achievements that you have accomplished from the time you were a child to the present time period. Briefly list them in order of the most personal importance to you.

more importance 1.

2.

3.

4.

less importance 5.

Descriptive Categories for Personal Accomplishments Survey

CAREER ACHIEVEMENTS

01 EDUCATIONAL: obtaining a degree, passing major exams, acceptance into schools, residency, fellowship

02 INTELLECTUAL: publications, writing achievements, honors and awards

03 COMPETENCE IN WORK: successful outcome in work, job promotions, given more responsibility at work, have a private practice, getting a grant, obtaining professorships, career advancement

04 FINANCIAL INDEPENDENCE, SECURITY AND ECONOMIC STABILITY: job raises, increased income, being self supportive financially

05 JOB FLEXIBILITY: change in job/career, started private practice, went to work, integration into new job, adaptation to new position

06 WORK SATISFACTION: jobs that are satisfying, nicer offices

FAMILY-AFFILIATION ACHIEVEMENTS

07 RELATIONSHIP WITH SIGNIFICANT MALE: improving relationship, resolution of problems, marriage, motivating husband

08 FRIENDSHIPS: maintaining friendships, making new friends, improving interpersonal skills

09 FAMILY ACHIEVEMENTS: birth of children, raising children, resolution of problems, providing emotional support to family, vicarious achievement through children, relations with extended family excluding parents

10 RELATIONSHIP WITH PARENTS: resolution of family of origin problems, improving/accepting relationship with parents

11 COMPETENCE IN DOMESTIC SPHERE: remodelling, gardening, improving cooking skills, sewing skills

INDIVIDUAL GROWTH AND DEVELOPMENT

12 AUTONOMY AND INDEPENDENCE: divorce, independence

13 SELF-CONFIDENCE AND SELF-ACCEPTANCE: achieve inner strength, become more assertive, develop maturity, become secure in value system, feeling competent and responsible

14 PERSONAL GROWTH: improvement of self, become more sensitive, insightful, less self-centered, become more patient, become well-rounded

15 IMPROVE PHYSICAL HEALTH: stop smoking, lose weight and maintain weight loss, develop regular exercise program, improve personal appearance, learn to handle stress, slowing down and taking life easier

16 RELIGIOUS DEVELOPMENT: strengthen faith/commitment, church involvement

17 ACCEPTANCE OF OTHERS: understanding others, acceptance of other's limitations

18 MAINTAINING CONTROL OF LIFE: balancing job/home responsibilities, setting goals and accomplishing them, organizing and structuring life, adapting to circumstances

OTHER CATEGORIES

19 COMPETITIVE ACTIVITIES/HOBBIES: athletic achievements, music and art achievements, sports related accomplishments such as diving, skiing, bicycling, holding offices in organizations other than adult community services

20 FINANCIAL PURCHASE: acquiring home or car, pride in material possessions

21 COMMUNITY SERVICE: activity in Junior League, political commitments, PTA involvement, holding offices in community service organizations as an adult

22 VACATIONING: exploring on vacation, saving up for vacation, traveling on vacation

23 GEOGRAPHICAL MOVE: moved to new city, adaptation to moving

APPENDIX E

ASSERTIVE COMPETENCE MOTIVATION QUESTIONNAIRE

Code Number:

INSTRUCTIONS:

Circle your response choice, either a, b, or c.

a) . . . . . .
b) . . . . . .
c) . . . . . .

Or, write in your choice when given blank lines.

a) . . . . . _____
b) . . . . . _____
c) . . . . . _____

Be sure to write in both most and least responses.

Indicate an answer to all of the questions.

1. Which of these two would come closer to describing why you might quit a job?
   a) too much competition among workers on the job, or
   b) you were a much better worker than anybody else

2. What would you like to know most about the tests you have just filled out?
   a) how well you've done compared to most others in this country, or
   b) just how well you have done for someone of your background

3. Suppose you were on a job and you were thinking of quitting. Why do you suppose you'd quit? Which of these would come closest to describing you?
   a) You had too little to say about how things got done, or
   b) You had too many things to decide about.

4. If you'd finished a hard job, which would you think about?
   a) Whether your boss thought you did a good job, or
   b) Whether you thought you did a good job.

5. Which would you rather overhear about yourself?
   a) Her opinion carries a lot of weight among people who know her, or
   b) People like to live next door to her.

6. Which would you rather overhear about yourself?
   a) She is fun to have at a party, or
   b) People like to go to her for advice on important matters.

7. Which of these would you most like to teach to your child? Least?
   a) To be a leader _____
   b) To do the work his teacher expects _____
   c) To be popular with his classmates _____

8. Which of these aspects of a job would you most want if you were to take a job different from the one you have now? Which least?
   a) A job where the people you work with are a nice group _____
   b) A job where you had to think for yourself _____
   c) A job where you had a lot to say in what's going on _____

9. Which would you rather overhear about yourself?
   a) Other people like her very much, or
   b) She could do anything she sets her mind on doing.

10. Which of these would you rather hear about yourself?
   a) She is always ready to meet challenges that come her way, or
   b) She is a really dependable and loyal friend.

11. Suppose I told you that you were doing very well on the interview and tests you have just completed.
   a) Would you want to know more about the tests, or
   b) Would you feel good about that?

12. What would you like your child to do most? Which of the three would you least like him to do?
   a) Want very much to do his best _____
   b) Stand up for his own rights _____
   c) Show kindness toward his playmates _____

13. Which is truest for you? Which of the three is least true?
   a) I would like to be better at what I try _____
   b) I would like to have more friends _____
   c) I would like to have more people pay attention to my point of view _____

14. If you were to take a job--maybe even something quite different from what you're doing now, what would you most want? Which of these would you want least?
   a) A job where you can show your real skills _____
   b) A job where no one bosses you around too much _____
   c) A job where you have a lot of friends _____

15. Which comes closer to the way you think:
   a) I've usually felt pretty sure my life would work out the way I want it to.
   b) There have been times when I haven't been very sure that my life would work out the way I want it to.

16. Which comes closer to the way you think?
   a) When I make plans ahead, I usually get to carry things out the way I expected.
   b) When I make plans ahead, things usually come up to make me change my plans.

APPENDIX F

STRUCTURED INTERVIEW

STRUCTURED INTERVIEW

Introduction: "I would appreciate it if you would answer the following questions to the best of your ability. Your answers will be kept in the strictest confidence. Most of the questions are concerned with your superficial habits, and none of them will embarrass you." (Begin taping now; emphasize italicized words.)

Your code number is _____. (Name?)

(HOUSEWIFE VERSION)

1. May I ask you age please?

2. Are you satisfied with being a housewife? (Why not?)

3. Does your homemaking carry heavy responsibility?
   a. Is there any time when you feel particularly rushed or under pressure?
   b. When you are under pressure does it bother you?

4. Would you describe yourself as a hard-driving, ambitious type of woman in accomplishing the things you want, getting things done as quickly as possible, or would you describe yourself as a relatively relaxed and easy-going person?
   a. Are you married?
   b. How would your husband describe you--as hard-driving and ambitious or as relaxed and easy-going?
   c. Has he ever asked you to slow down in your work? never? How would he put it--in his own words?

5. When you get angry or upset, do people around you know about it? How do you show it?

6. Do you belong to any clubs or organizations? What offices have you held in the organizations? none?

7. Do you think you drive harder to accomplish things than most of your friends?

8. Do you work late into the evening? How often?

9. Do you have any children? When they were around the ages of six and eight, did you ever play competitive games with them, like cards, checkers, Monopoly?
   a. Did you always allow them to win on purpose?
   b. Why (or why not)?

10. When you play games with people your own age, do you play for the fun of it, or are you really in there to win?

11. Is there any competition in your housework or related activities? Do you enjoy this?
    a. Are you competitive in other areas, sports for example?

(continue with questions 12-22)

(EMPLOYED WOMAN VERSION)

1. May I ask you age please?

2. Are you satisfied with your job level? Why not?

3. Does your job carry heavy responsibility?
   a. Is there any time when you feel particularly rushed or under pressure?
   b. When you are under pressure does it bother you?

4. Would you describe yourself as a hard-driving, ambitious type of woman in accomplishing the things you want, getting things done as quickly as possible, or would you describe yourself as a relatively relaxed and easy-going person?
   a. Are you married?
   b. How would your husband describe you--as hard-driving and ambitious or as relaxed and easy-going?
   c. Has he ever asked you to slow down in your work? never? How would he put it--in his own words?

5. When you get angry or upset, do people around you know about it? How do you show it?

6. Do you belong to any clubs or organizations? What offices have you held in the organizations? none?

7. Do you think you drive harder to accomplish things than most of your associates?

8. Do you take work home with you? How often?

9. Do you have any children? When they were around the ages of six and eight, did you ever play competitive games with them, like cards, checkers, Monopoly?
   a. Did you always allow them to win on purpose?
   b. Why (or why not)?

10. When you play games with people your own age, do you play for the fun of it, or are you really in there to win?

11. Is there any competition in your job? Do you enjoy this?
    a. Are you competitive off the job, sports for example?

12. When you are in your automobile, and there is a car in your lane going far too slowly for you, what do you do about it? Would you mutter and complain to yourself? Would anyone riding with you know that you were annoyed?

13. Most people who work have to get up fairly early in the morning--in your particular case, uh-what-time-uh-do-you-uh, ordinarily uh-uh-to-uh-uh-get-up?

14. If you make a date with someone for, oh, two o'clock in the afternoon, for example, would you be there on time?
    a. If you are kept waiting, do you resent it?
    b. Would you say anything about it?

15. If you see someone doing a job rather slowly and you know that you could do it faster and better yourself, does it make you restless to watch him?
    a. Would you be tempted to step in and do it yourself?

16. What irritates you most about your work or the people with whom you work?

17. Do you eat rapidly? Do you walk rapidly? After you've finished eating, do you like to sit around the table and chat, or do you like to get up and get going?

18. When you go out in the evening to a restaurant and you find eight or ten people waiting ahead of you for a table, will you wait? What will you do while you are waiting?

19. How do you feel about waiting in lines: Bank lines, or Supermarket lines? Post Office lines?

20. Do you always feel anxious to get going and finish whatever you have to do?

21. Do you have the feeling that time is passing too rapidly for you to accomplish all the things you'd like to get done in one day?
    a. Do you often feel a sense of time urgency? Time pressure?

22. Do you hurry in doing most things?

All right, that completes the interview. Thank you very much.

Interviewers state: "This complete the interview of Subject (give code numbers)."

Structured Interview Rating Form

TAPE NO. _____ Participant ID _____

Tape Counter Reading _____ Date _____

Side: 1A 2B

BEHAVIOR PATTERN INTERVIEW

HANDSHAKE:	"limp wrist"	weak	average	strong
	moist and cold	average	warm and dry	
ATTITUDE:	friendly	neutral	hostile	
GENERAL APPEARANCE:	calm	nervous	tense	alert
MOTOR PACE:	slow	average	hurried	
SPEECH HURRYING:	none	occasional	frequent	
VOICE QUALITY:	subdued	average	strong	
RHYTHMIC MOVEMENTS HANDS/FEET		none	occasional	frequent
FACIAL EXPRESSIONS:	flat	expressive	lateral mouth speech	clenched jaw
LAUGHTER:	none	"round mouth"	lateral smile	frequent
FIST CLENCHING:	none	rare	occasional	frequent
SIGHING:	none	occasional	frequent	

COMMENTS: _____

_____

_____

INTERVIEWER'S ASSESSMENT

A1 A2 X B

Certain Uncertain

Interviewer's ID/Name _____

FINAL ASSESSMENT

A1 A2 X B

Certain Uncertain

Name _____

APPENDIX G

JENKINS ACTIVITY SURVEY

Employed Version

Code Number:

Instructions: The following is a list of questions. I would like you to choose the answer that is true for you, and fill in the space in front of that answer. Each person is different, so there are no "right" or "wrong" answers. Please do not leave any statements blank.

1. Do you ever have trouble finding time to get your hair cut or styled?
   - o Never
   - o Occasionally
   - o Almost always

2. How often does your job "stir you into action"?
   - o Less often than most people's jobs
   - o About average
   - o More than most people's jobs

3. Is your everyday life filled mostly by
   - o problems needing a solution?
   - o challenges needing to be met?
   - o a rather predictable routine of events?
   - o not enough things to keep me interested or busy?

4. Some people live a calm, predictable life. Others often find themselves facing unexpected changes, frequent interruptions, inconveniences, or "things going wrong." How often are you faced with these minor (or major) annoyances or frustrations?
   - o Several times a day
   - o About once a day
   - o A few times a week
   - o Once a week
   - o Once a month or less

5. When you are under pressure or stress, what do you usually do?
   - o Do something about it immediately
   - o Plan carefully before taking any action

6. Ordinarily, how rapidly do you eat?
   - o I'm usually the first one finished.
   - o I eat a little faster than average.
   - o I eat at about the same speed as most people.
   - o I eat more slowly than most people.

7. Has your spouse or a friend ever told you that you eat too fast?
   - o Yes, often
   - o Yes, once or twice
   - o No, never

8. How often do you find yourself doing more than one thing at a time, such as working while eating, reading while dressing, or figuring out problems while driving?
   - o I do two things at once whenever practical.
   - o I do this only when I'm short of time.
   - o I rarely or never do more than one thing at a time.

9. When you listen to someone talking, and this person takes <u>too long</u> to come to the point, how often do you <u>feel</u> like hurrying the person along?
   - o Frequently
   - o Occasionally
   - o Almost never

10. How often do you actually "put words in the person's mouth" in order to speed things up?
    - o Frequently
    - o Occasionally
    - o Almost never

11. If you tell your spouse or a friend that you will meet somewhere at a definite time, how often do you arrive late?
    o Once in a while
    o Rarely
    o I am never late.

12. How often do you find yourself hurrying to get places even when there is plenty of time?
    o Frequently
    o Occasionally
    o Almost never

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?
    o Sit and wait
    o Walk about while waiting
    o 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?
    o Accept it calmly
    o Feel impatient but not show it
    o Feel so impatient that someone watching can tell I am restless
    o 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?
    o Most of the time
    o Half the time
    o Only occasionally
    o Never

16. When you were younger, did most people consider you to be
    o definitely hard-driving and competitive?
    o probably hard-driving and competitive?
    o probably more relaxed and easygoing?
    o definitely more relaxed and easygoing?

17. Nowadays, do you consider yourself to be
    o definitely hard-driving and competitive?
    o probably hard-driving and competitive?
    o probably more relaxed and easygoing?
    o definitely more relaxed and easygoing?

18. Would your spouse (or closest friend) rate you as
    o definitely hard-driving and competitive?
    o probably hard-driving and competitive?
    o probably relaxed and easygoing?
    o definitely relaxed and easygoing?

19. Would your spouse (or closest friend) rate your general level of activity as
    o too slow--should be more active?
    o about average--busy much of the time?
    o too active--should slow down?

20. Would people you know well agree that you take your work too seriously?
    o Definitely yes
    o Probably yes
    o Probably no
    o Definitely no

21. Would people you know well agree that you have less energy than most people?
    o Definitely yes
    o Probably yes
    o Probably no
    o Definitely no

22. Would people you know well agree that you tend to get irritated easily?
    o Definitely yes
    o Probably yes
    o Probably no
    o Definitely no

23. Would people who know you well agree that you tend to do most things in a hurry?
    o Definitely yes
    o Probably yes
    o Probably no
    o Definitely no

24. Would people who know you well agree that you enjoy a "contest" (competition) and try hard to win?
    o Definitely yes
    o Probably yes
    o Probably no
    o Definitely no

25. How was your temper when you were younger?
    o Fiery and hard to control
    o Strong but controllable
    o No problem
    o I almost never got angry

26. How is your temper nowadays?
    o Fiery and hard to control
    o Strong but controllable
    o No problem
    o 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?
    o I feel O.K. because I work better after an occasional break.
    o I feel only mildly annoyed.
    o I really feel irritated because most such interruptions are unnecessary.

28. How often are there deadlines on your job?
    o Daily or more often
    o Weekly
    o Monthly or less often
    o Never

29. These deadlines usually carry
    o minor pressure because of their routine nature.
    o considerable pressure, since delay would upset my entire work group.
    o Deadlines never occur on my job.

30. Do you ever set deadlines or quotas for yourself at work or at home?
    o No
    o Yes, but only occasionally
    o Yes, once a week or more

31. When you have to work against a deadline, what is the quality of your work?
    o Better
    o Worse
    o 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?
    o No, never
    o Yes, but only in emergencies
    o Yes, regularly

33. Are you content to remain at your present job level for the next five years?
    o Yes
    o No, I want to advance.
    o 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?
    o A small increase in pay without a promotion to a higher level job
    o 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?
    o Yes
    o No
    o My type of job does not provide regular vacations.

36. In the last three years, how has your personal yearly income changed?
    o It has remained the same or gone down.
    o It has gone up slightly (as the result of cost-of-living increases or automatic raises based on years of service.
    o 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?
    o Rarely or never
    o Once a week or less
    o 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 night or weekends)?
    o It is not possible on my job.
    o Rarely or never
    o Occasionally (less than once a week)
    o Once a week or more

39. When you find yourself getting tired on the job, what do you usually do?
    o Slow down for a while until my strength comes back
    o 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?
    o Rarely
    o About as often as they look to others
    o 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?
    o Never
    o Occasionally
    o 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
    o much more effort.
    o a little more effort.
    o a little less effort.
    o much less effort.

43. In sense of responsibility, I am
    o much more responsible.
    o a little more responsible.
    o a little less responsible.
    o much less responsible.

44. I find it necessary to hurry
    o much more of the time.
    o a little more of the time
    o a little less of the time.
    o much less of the time.

45. In being precise (careful about detail), I am
    o much more precise.
    o a little more precise.
    o a little less precise.
    o much less precise.

46. I approach life in general
    o much more seriously.
    o a little more seriously.
    o a little less seriously.
    o much less seriously.

For questions 47-49, compare your present work with your work setting of fives 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
    o at my present job.
    o five years ago.
    o Cannot decide

48. I carried more responsibility
    o at my present job.
    o five years ago.
    o Cannot decide

49. I was considered to be at a higher level (in prestige or social position)
    o at my present job.
    o five years ago.
    o 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.)
    o 0-1
    o 2
    o 3
    o 4
    o 5 or more

51. How much schooling did you receive?
    - o 0-4 years
    - o 5-8 years
    - o Some high school
    - o Graduated from high school
    - o Trade school or business college
    - o Some college (including junior college)
    - o Graduated from a four-year college
    - o 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?
    - o No
    - o Yes, I held one such position.
    - o Yes, I held two or more such positions.

Permission to use this survey by The Psychological Corporation.

Unemployed Version

Code Number:

Instructions: The following is a list of questions. I would like you to choose the answer that is true for you, and fill in the space in front of that answer. Each person is different, so there are no "right" or "wrong" answers. Please do not leave any statements blank.

1. Do you ever have trouble finding time to get your hair cut or styled?

   o Never
   o Occasionally
   o Almost always

2. Is your everyday life filled mostly by

   o problems needing solution?
   o challenges needing to be met?
   o a rather predictable routine of events?
   o not enough things to keep me interested or busy?

3. When you are under stress or in a tense situation, do you

   o lose your appetite and eat less?
   o eat more often or larger amounts to relieve the tension?
   o notice no change in eating patterns?

4. When you are under stress or in a tense situation, does your heart beat

   o go faster, harder, or both?
   o go slower or with an irregular "jumping" rhythm?
   o remain the same?
   o Don't know. I have never noticed.

5. When you are under pressure or stress, what do you usually do?

   o Do something about it immediately
   o Plan carefully before taking any action

6. Ordinarily, how rapidly do you eat?

   o I'm usually the first one finished.
   o I eat a little faster than average.
   o I eat at about the same speed as most people.
   o I eat more slowly than most people.

7. Has your spouse or some friend ever told you that you eat too fast?

   o Yes, often
   o Yes, once or twice
   o No, never

8. When you listen to someone talking, and this person takes <u>too long</u> to come to the point, how often do you <u>feel</u> like hurrying the person along?

   o Frequently
   o Occasionally
   o Almost never

9. How often do you actually "put words in the person's mouth" in order to speed things up?

   o Frequently
   o Occasionally
   o Almost never
   o _____

10. How often do you find yourself doing more than one thing at a time, such as working while eating, reading while dressing, or figuring out problems while driving?

    o I do two things at once whenever practical.
    o I do this only when I'm short of time.
    o I rarely or never do more than one thing at a time.

11. When you can do a job very easily and you see someone (not a beginner) doing it more slowly than you could do it, do you

    o let him continue at his own pace?
    o offer help if he wants it?
    o suggest how he might do it more quickly?
    o actually step in and hurry things along?
    o take over the job yourself.

12. When you are in the middle of doing something important and someone interrupts you, how do you usually feel inside?

    o I feel O.K. because I work better after an occasional break.
    o I feel only mildly annoyed.
    o I really feel irritated because most such interruptions are unnecessary.

13. If repeated interruptions have made you really angry, do you

    o tell the next interrupter in a firm way?
    o tell the next interrupter in a quiet way?
    o close your door?
    o move to a quiet place?

14. If you tell your spouse or a friend that you will meet somewhere at a definite time, how often do you arrive late?

    o Once in a while
    o Rarely
    o I am never late.

15. Considering the last ten or so times you went to scheduled events such as group meetings, church services, concerts, sporting events, etc., how many times did you arrive late?

    o Not late for any
    o Late once
    o More than once, but not often
    o Fairly often
    o Not applicable. I haven't gone to such events recently.

16. 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?

    o Sit and wait
    o Walk about while waiting
    o Usually carry some reading matter or writing paper so I can get something done while waiting

17. When you have to "wait in line" at a restaurant, a store, or the post office, what do you do?

    o Accept it calmly
    o Feel impatient but not show it
    o Feel so impatient that someone watching can tell I am restless
    o Refuse to wait in line, and find ways to avoid such delays

18. When you have to "wait in line," such as for a cashier in a store, and the person ahead of you is being unnecessarily slow, does it

    o make you feel angry and you show it?
    o make you feel angry but you hide it?
    o make you feel a little restless but not angry?
    o I just relax during this time.

19. 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?

    o Most of the time
    o Half the time
    o Only occasionally
    o Never

20. When you play on a team or take part in some group activity, are you satisfied with yourself

    o only if your skill is clearly better than most others?
    o as long as your skill is about average for the group?
    o no matter how well you do, since you take part only for enjoyment?

21. When your team loses, how do you usually feel?

    o It doesn't bother me at all.
    o It bothers me a little.
    o It really stirs me up.

22. How do you feel about competition on the job or in outside activities?

    o Prefer to avoid it
    o Accept it because it's a necessary evil
    o Enjoy it because it's stimulating

23. When you were younger, did most people consider you to be

    o definitely hard-driving and competitive?
    o probably hard-driving and competitive?
    o probably more relaxed and easygoing?
    o definitely more relaxed and easygoing?

24. Nowadays do you consider yourself to be

    o definitely hard-driving and competitive?
    o probably hard-driving and competitive?
    o probably more relaxed and easygoing?
    o definitely more relaxed and easygoing?

25. Would your spouse (or closest friend) rate you as

    o definitely hard-driving and competitive?
    o probably hard-driving and competitive?
    o probably more relaxed and easygoing?
    o definitely more relaxed and easygoing?

26. Would your spouse (or closest friend) rate your general level of activity as

    o too slow--should be more active?
    o about average--busy much of the time?
    o too active--should slow down?

27. How was your temper when you were younger?

- o Fiery and hard to control
- o Strong but controllable
- o No problem
- o I almost never got angry.

28. How is your temper nowadays?

- o Fiery and hard to control
- o Strong but controllable
- o No problem
- o I almost never get angry.

29. Would people you know well agree that you tend to get irritated easily?

- o Definitely yes
- o Probably yes
- o Probably no
- o Definitely no

30. Would people who know you well agree that you tend to do most things in a hurry?

- o Definitely yes
- o Probably yes
- o Probably no
- o Definitely no

31. Would people you know well agree that you have less energy than most people?

- o Definitely yes
- o Probably yes
- o Probably no
- o Definitely no

32. Would people who know you well agree that you enjoy a "contest" (competition) and try hard to win?

- o Definitely yes
- o Probably yes
- o Probably no
- o Definitely no

33. How often do you do something mildly risky just for the excitement of it?

- o Never
- o Once in a while
- o Regularly

34. How often do you experience strong feelings which you feel you cannot (or should not) express?

- o Once a day or more often
- o A few times a week
- o About once a week
- o Once a month or less

35. Do you ever laugh at a "dirty joke"?

- o Often
- o Sometimes
- o Only rarely
- o Never

36. How easy is it for you to relax after a hard day?

- o No problem, I relax completely
- o Some trouble, but I get relaxed after a while
- o Very difficult, I stay somewhat tense for at least several hours

37. How often do you keep so busy all day that you find yourself completely "worn out" by evening?

- o About once or twice a month
- o About once a week
- o Two or three days a week
- o Four or more days a week

38. "Top executives" usually reach their high positions primarily because

- o they display a favorable social image, or they are fortunate enough to be in the right place when a chance for advancement opens up.
- o they consistently work harder, or they administer better than other workers at their earlier level.

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

- o Rarely
- o About as often as they look to others
- o More often than they look to others

40. In the past year, how often did you attend religious services?

- o Never
- o About once or twice a year
- o Several times a year
- o About once or twice a month
- o About once a week
- o More than once a week

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

- o It has remained the same or gone down.
- o It has gone up slightly (as the result of cost-of-living increases or automatic raises based on years of service).
- o It has gone up considerably.
- o I had no personal income in this period.

For questions 42-45 compare yourself with the average person having the same kind of daily activities and life situation as you (e.g., similar occupation, family responsibilities, outside interests) and mark the most accurate description.

42. In the amount of effort put forth, I give

- o much more effort.
- o a little more effort.
- o a little less effort.
- o much less effort.

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

- o much more precise.
- o a little more precise.
- o a little less precise.
- o much less precise.

44. In sense of responsibility, I am

- o much more responsible.
- o a little more responsible.
- o a little less responsible.
- o much less responsible.

45. I approach life in general

- o much more seriously.
- o a little more seriously.
- o a little less seriously.
- o much less seriously.

46. How much schooling did you receive?

- o 0-4 years (skip to Item 50)
- o 5-8 years (skip to Item 50)
- o Some high school
- o Graduated from high school
- o Trade school or business college
- o Some college (including junior college)
- o Graduated from four-year college
- o Post-graduate work at a college or university

47. When you were in high school, what kind of grades or marks did you try to get in your courses?

- o Tried to get average grades ("C" in most school systems)
- o Tried to get grades which were the same as (or only slightly better than) those my friends were getting
- o Tried to get top grades ("A" in most school systems), even though this might have made the other students feel I was "different" if they had known about it
- o Didn't worry much about grades. I just took things as they came.

48. When you were in high school or college, did you play on any athletic teams?

- o No
- o Yes, one team
- o Yes, two or more teams

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

- o No
- o Yes, I held one such position.
- o Yes, I held two or more such positions.

The next questions deal with your current life situation and activities.

50. Thinking now of your immediate family (including spouse, children, or others living with you), how would you compare the total amount of problems and disappointments they cause you with the total amount of help and encouragement they give you?

- o Far more help and encouragement than troubles
- o A little more help and encouragement than troubles
- o About an even balance
- o A little more problems and disappointments than help
- o Far more problems and disappointments than help

51. Do the people with whom you live give you as much affection as you would like?

- o Yes, almost all the time
- o Only part of the time
- o Only rarely or never

52. In the past year during the average busy week, how many hours did you spend doing work at home or in other places, including volunteer activities?

- o Less than 20 hours
- o 20 to 34 hours
- o 35 to 40 hours
- o 41 to 45 hours
- o 46 to 55 hours
- o More than 55 hours

53. How often do your daily activities "stir you into action"?

- o Less often than most people's activities
- o About average
- o More often than most people's activities

54. Do you ever keep two jobs moving forward at the same time by shifting back and forth rapidly from one to the other?

- o No, never
- o Yes, but only in emergencies
- o Yes, regularly

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

- o Never
- o Occasionally
- o Frequently

56. How often do you stay up later than you prefer, or get up especially early, in order to get more work done?

- o Less than once a week
- o Once or twice a week
- o Three or more times a week

57. How often are you faced with deadlines for completing things? (If deadlines do not occur regularly, please mark the closest answer below.)

- o Daily or more often
- o Weekly
- o Monthly
- o Rarely or never

58. These deadlines usually carry

- o minor pressure because of their routine nature.
- o considerable pressure, since delay would upset other people who are involved.
- o I never encounter deadlines.

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

- o No
- o Yes, but only occasionally
- o Yes, once a week or more

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

- o Better
- o Worse
- o The same (pressure makes no difference)

61. If you were looking for a job, which would you rather take?

- o A job with somewhat higher pay, but less prestige and challenge
- o A job with more prestige and challenge, but somewhat less pay

62. To what extent do you like to plan in advance for a holiday or a vacation?

- o I like to plan it hour by hour
- o I like only a general plan for each day
- o I don't like to make a plan, but prefer to take it as it comes.

63. After you have been away from your normal daily schedule for a week or more (such as a vacation), do you

- o want to stay away longer if possible?
- o feel about ready to return to your normal daily activities?
- o feel impatient for the vacation to end so you can get back to your regular schedule?

64. Comparing your present activities to your activities of five years ago, which would you considered "higher level" in prestige or social position?

- o My present activities
- o My activities five years ago
- o Both the same, or cannot decide

65. How many <u>different</u> job titles have you held in the last 10 years? (Be sure to count all shifts in kinds of work, shifts to new employers, and shifts up and down in the firm(s) for which you have worked.)

- o 1
- o 2
- o 3
- o 4
- o 5 or more
- o I have not had paid employment during the last 10 years.

66. Did you ever hold more than one job at the same time, or hold a job in addition to another main activity such as full-time schooling or caring for young children?

- o No
- o Yes, for more than a month but less than two years
- o Yes, for two to four years
- o Yes, for more than four years

67. Since you finished your formal education, did you take correspondence courses or go to night school to qualify yourself for getting a better job or to improve your chances for advancement? (Please do not include on-the-job training or courses taken mainly for enjoyment.)

- o No
- o Yes, for more than a month but less than two years
- o Yes, for two to four years
- o Yes, for more than four years

68. What is your usual major daily activity?

- o Student
- o Housewife
- o Self-employed
- o Retired
- o Other _____

APPENDIX H

BACKGROUND INFORMATION SHEET

Code number _____

Subject's age _____

Occupation _____

Hours worked per week _____

Education _____

Number of children _____

Hours spent in volunteer or club activities each week _____

Spouse's occupation _____

Spouse's education _____

Mother's education _____

Mother's occupation before retirement _____

Father's education _____

Father's occupation before retirement _____

Working by choice _____

necessity _____

both _____

Systolic _____

Diastolic _____

APPENDIX I

BACKGROUND INFORMATION

Table I-1

Contingency Table Summary for Background Information by Occupational Category

Variable	df	Chi-square χ^2	Prob.
Marital status	3	10.98	.01
physicians/lawyers vs. nursing professors	1	1.29	N.S.
physicians/lawyers vs. nurses	1	0.44	N.S.
physicians/lawyers vs. housewives	1	7.06	.008
nursing professors vs. nurses	1	3.13	N.S.
nursing professors vs. housewives	1	3.24	N.S.
nurses vs. housewives	1	10.00	.002
Why working	6	25.83	.0002
physicians/lawyers vs. nursing professors	2	4.11	N.S.
physicians/lawyers vs. nurses	2	10.83	.004
physicians/lawyers vs. housewives	2	3.47	N.S.
nursing professors vs. nurses	2	6.08	.05
nursing professors vs. housewives	2	8.58	.01
nurses vs. housewives	2	20.83	.0001
Mother's occupation	9	5.09	N.S.

Table I-2

ANOVA Summary Table for Background Information
by Occupational Category

Source	df	Mean square	*F* value	Prob. *F*
Participant's age	3	33.48	1.90	N.S.
Error	76	17.65		
Number of children	3	9.73	6.93	.0004
Error	76	1.40		
Number of children for married individuals	3	3.88	3.06	.03
Error	59	1.27		
Hours worked per week	2	242.32	2.68	N.S.
Error	57	90.31		
Husband's occupation	3	317.51	1.59	N.S.
Error	60	200.09		
Father's occupation	3	340.42	.61	N.S.
Error	75	558.08		

Table I-3

Pairwise Comparisons for Number of Children by Occupational Category

Variable	Physicians/ lawyers vs. nursing professors	Physicians/ lawyers vs. nurses	Physicians/ lawyers vs. housewives	Nursing professors vs. nurses	Nursing professors vs. housewives	Nurses vs. housewives
Number of children[a]	-2.13	1.87	-1.87	4.00**	.27	-3.73**
Number of children[b] (married individuals)	-.93	1.94	-.36	-2.91*	.63	-2.42

[a] df = 76, Tukey values: *p .05 = 2.63, **p .01 = 3.23.

[b] df ≈ 50, Tukey values: *p .05 = 2.66, p .01 = 3.29.

Table I-4

Kruskal-Wallis One-Way ANOVA for Background Information by Occupational Category

Variable	Physicians/ lawyers	Nursing professors	Nurses	Housewives	Chi-square	
	Mean rank	Mean rank	Mean rank	Mean rank	χ^2	Prob.
Participant's education	69.50	50.13	20.85	21.52	65.55	.001
Hours volunteer work per week	35.30	35.25	35.77	55.67	11.63	.009
Father's education	46.85	38.90	32.47	43.77	4.5	N.S.
Mother's education	37.20	40.63	38.55	45.63	1.6	N.S.
Husband's education	44.11	26.89	26.92	32.77	8.89	.03

Table I-5

Comparisons of Rank Sums for Background Information by Occupational Category

Variable	Physicians/ lawyers vs. nursing professors	Physicians/ lawyers vs. nurses	Physicians/ lawyers vs. housewives	Nursing professors vs. nurses	Nursing professors vs. housewives	Nurses vs. housewives
Education[a]	19.37*	48.65**	47.98**	29.28**	28.61**	-.67
Hours volunteer activities[a]	.05	.47	20.37*	-.52	-20.42*	-19.90*
Husband's education[b]	17.22*	17.19**	11.34	.03	-5.88	-5.85

[a] *$\underline{p}$ .05 = 18.88, **$\underline{p}$ .01 = 22.88.

[b] *$\underline{p}$ .05 = 16.89, **$\underline{p}$ .01 = 15.26.

APPENDIX J

SEX-ROLE DATA

Table J-1

ANOVA Summary Table for Sex-Role Questionnaires
by Occupational Category

Source	df	Mean square	F value	Prob. F
Brogan and Kutner's Sex-Role Orientation	3	479.83	1.83	N.S.
Error	76	261.95		
Bem's Sex-Role Inventory: Femininity	3	0.12	.53	N.S.
Error	76	.22		
Bem's Sex-Role Inventory: Masculinity	3	.73	1.75	N.S.
Error	76	.41		

Table J-2

t-Test Summary Table for Sex-Role Questionnaires by Employment Status

Variable	*t* Value	df	Prob. *t*
Brogan and Kutner's Sex-Role Orientation	1.6	25.3	N.S.
Bem's Sex-Role Inventory: Femininity	.96	78.0	N.S.
Bem's Sex-Role Inventory: Masculinity	2.24	78.0	.03

APPENDIX K

ACHIEVEMENT BEHAVIOR DATA

Table K-1

Mean Ranks of Accomplishments Listed on the PAS by Occupational Category

Achievements	Physicians/ lawyers	Nursing professors	Nurses	Housewives	Chi-square χ^2	Chi-square Prob.
		Past year				
Career	52.45	53.65	39.05	16.85	32.96	0.001
Family-affiliation	42.63	35.32	36.42	47.63	3.72	N.S.
Individual growth	28.92	41.15	40.92	51.00	9.79	0.02
Other	37.67	32.52	40.00	51.80	8.27	0.04
Competitive activities/ hobbies	38.40	34.95	39.27	49.38	7.70	0.05
Financial purchase	43.27	37.50	43.72	37.50	6.41	N.S.
Community service	36.60	36.42	36.25	52.72	19.14	0.001
Vacationing	39.40	39.47	45.63	37.50	6.67	N.S.
Geographical move	41.47	43.45	37.50	39.57	3.46	N.S.
		College to present				
Career	51.92	52.47	36.25	21.35	24.68	0.001
Family-affiliation	29.47	36.50	35.07	60.95	22.16	0.001
Individual growth	39.85	37.27	44.32	40.55	1.30	N.S.
Other	39.02	38.47	41.02	43.47	0.72	N.S.
Competitive activities/ hobbies	42.90	39.20	41.07	38.82	1.09	N.S.
Financial purchase	39.63	39.40	41.70	41.27	0.45	N.S.
Community service	39.90	39.95	38.00	44.15	4.26	N.S.
Vacationing	40.35	42.57	40.70	38.38	1.21	N.S.
Geographical move	38.50	40.45	40.52	42.52	2.10	N.S.
		Whole life				
Career	46.20	54.85	31.63	29.32	16.54	0.001
Family-affiliation	32.92	39.85	36.45	52.77	8.47	0.04
Individual growth	40.72	35.40	45.02	40.85	1.91	N.S.
Other	39.50	36.77	35.63	50.10	6.56	N.S.
Competitive activities/ hobbies	41.47	35.00	34.80	50.72	9.78	0.02
Financial purchase	39.00	45.00	39.00	39.00	9.23	0.03
Community service	39.90	41.97	38.00	42.13	2.40	N.S.
Vacationing	40.45	38.50	44.55	38.50	6.34	N.S.
Geographical move	39.50	39.50	39.50	43.50	6.08	N.S.

Table K-2

Comparisons by Occupational Category Based on Rank Sums of PAS Achievements

Achievements	Physicians/ lawyers vs. nursing professors	Physicians/ lawyers vs. nurses	Physicians/ lawyers vs. housewives	Nursing professors vs. nurses	Nursing professors vs. housewives	Nurses vs. housewives
			Past year			
Career	1.20	13.50	35.60**	14.60	36.80**	22.20*
Individual growth	-12.23	-12.00	-22.08**	.23	-9.85	-10.08
Other	5.15	2.33	14.13	7.48	19.28*	11.80
Competitive activities/ hobbies	3.45	-0.87	-10.98	-4.32	-14.43	-10.11
Community service	.18	-0.17	-16.12	.17	-16.30	-16.47
			College to present			
Career	.55	15.67	30.57**	16.22	31.12**	14.90
Family	-7.03	-5.60	-31.48**	1.43	-24.45**	-25.88**
			Whole life			
Career	8.67	14.57	16.88	23.22**	25.53**	2.31
Family	-6.93	-3.53	-19.85*	3.40	-12.92	-16.32
Competitive activities/ hobbies	6.47	6.67	-9.25	.20	-15.72	-15.92
Financial purchase	-6.00	.00	.00	6.00	6.00	6.00

*p .05 = 18.88.

**p .01 = 22.88.

Table K-3

Career Achievements Minus Family-Affiliation Achievements by Employment Status

Employment status	N	Mean score	z score	Prob. z
		Past year		
Employed	60	46.80	-4.20	.0001
Unemployed	20	21.60		
		College to present		
Employed	60	47.81	-4.88	.0001
Unemployed	20	18.57		
		Whole life		
Employed	60	45.62	-3.41	.0006
Unemployed	20	25.15		

Table K-4

Career Achievements and Family-Affiliation Achievements by Employment Status

Achievement	Employment status	N	Mean score	z Score	Prob. z
		Past year			
Career	employed	60	48.38	5.29	.0001
	unemployed	20	16.85		
Family	employed	60	38.13	1.60	N.S.
	unemployed	20	47.63		
		College to present			
Career	employed	60	46.88	-4.27	.0001
	unemployed	20	21.35		
Family	employed	60	33.68	4.59	.0001
	unemployed	20	60.95		
		Whole life			
Career	employed	60	44.22	-2.49	.01
	unemployed	20	29.32		
Family	employed	60	36.41	2.74	.00
	unemployed	20	52.77		

Table K-5

Career Achievements Minus Family Achievements by Employment Status

Employment status	N	Ties	Career achievements		Family achievements		z	Two-tailed Prob.
			N[a]	$\bar{X}$	N[b]	$\bar{X}$		
				Past year				
Employed	60	3	41	31.77	16	21.91	-3.78	.001
Unemployed	20	2	4	5.75	14	10.57	-2.72	.006
				College to present				
Employed	60	7	39	30.46	14	17.36	-4.18	.001
Unemployed	20	2	1	2.00	17	9.94	-3.64	.001
				Whole life				
Employed	60	5	30	32.88	25	22.14	-1.81	N.S.
Unemployed	20	2	3	5.33	15	10.33	-3.03	.002

[a] N represents the number of women who reported more career achievements than family achievements.

[b] N represents the number of women who reported more family achievements than career achievements.

Table K-6

ANOVA Summary Table for Assertive Competence Motivation

Source	df	Mean square	F value	Prob. F
ACM by occupational category	3	9.15	.88	N.S.
Error	76	10.45		
ACM by high vs. medium status employed	1	.21	.02	N.S.
Error	58	11.05		
ACM by medium status employed vs. unemployed	1	.02	.00	N.S.
Error	38	10.86		

APPENDIX L

TYPE A DATA

Table L-1

ANOVA Summary Table for JAS Components by Occupation

Source	df	Mean square	F value	Prob. F
By occupational category:				
JAS Type A	3	289.71	3.41	.02
Error	76	84.87		
JAS Speed and Impatience	3	115.83	1.45	N.S.
Error	76	80.02		
JAS Job Involvement	3	104.34	1.70	N.S.
Error	76	61.43		
JAS Hard-Driving	3	157.69	1.47	N.S.
Error	76	106.96		
MANOVA	12		2.33	.008
	193			
Male-dominated vs. female dominated employed:				
JAS Type A	1	534.67	7.15	.01
Error	58	74.80		
JAS Speed and Impatience	1	238.01	2.85	N.S.
Error	58	83.41		
JAS Job Involvement	1	76.96	1.11	N.S.
Error	58	69.47		
JAS Hard-Driving	1	220.32	2.18	N.S.
Error	58	100.96		
Female-dominated employed vs. female-dominated unemployed:				
JAS Type A	1	88.92	.95	N.S.
Error	58	93.86		
JAS Speed and Impatience	1	12.54	.18	N.S.
Error	58	70.85		
JAS Job Involvement	1	.17	.00	N.S.
Error	58	66.30		
JAS Hard-Driving	1	226.87	2.09	N.S.
Error	58	108.69		

Table L-2

Pairwise Comparisons for JAS Type A by Occupational Category

Variable	Physicians/ lawyers vs. nursing professors	Physicians/ lawyers vs. nurses	Physicians/ lawyers vs. housewives	Nursing professors vs. nurses	Nursing professors vs. housewives	Nurses vs. housewives
JAS Type A	2.065	2.283	3.060*	.218	.995	.777

df = 76; Tukey value *p .05 = 2.63; p .01 = 3.23.

Table L-3

ANOVA Summary Table for Blood Pressure
by Occupational Category

Source	df	Mean square	F value	Prob. F
Systolic blood pressure	3	15.76	.13	N.S.
Error	76	119.03		
Diastolic blood pressure	3	29.02	.54	N.S.
Error	76	55.68		

Table L-4

t-Test Summary Table for Blood Pressure
by Employment Status

Variable	*t* value	df	Prob. *t*
Systolic blood pressure	-.19	78	N.S.
Diastolic blood pressure	-.71	78	N.S.

APPENDIX M

STRUCTURED INTERVIEW DATA

Table M-1

ANOVA Summary Table for Background Information by SI Behavior Pattern

Source	df	Mean square	*F* value	Prob. *F*
Participant's age	2	36.21	2.04	N.S.
Error	77	17.79		
Number of children	2	1.10	.64	N.S.
Error	77	1.74		
Hours worked per week	2	32.89	.34	N.S.
Error	57	97.66		
Husband's occupation	2	140.08	.67	N.S.
Error	61	207.83		
Father's occupation	2	12.24	.02	N.S.
Error	76	563.85		

Table M-2

Kruskal-Wallis One-Way ANOVA for Background Information by SI Behavior Pattern

	Type A1	Type A2	Type B	Chi-square	
Variable	Mean rank	Mean rank	Mean rank	χ^2	Prob.
Participant's education	45.75	39.11	35.68	2.08	N.S.
Hours volunteer work per week	38.77	43.32	35.00	1.57	N.S.
Father's education	37.41	32.97	22.33	5.59	N.S.
Mother's education	41.50	38.99	43.32	.44	N.S.
Husband's education	37.96	41.54	41.75	.43	N.S.

Table M-3

Contingency Table Summary for Background Information
by SI Behavior Pattern

Variable	df	Chi-square	
		χ^2	Prob.
Marital status	2	5.16	N.S.
Occupational category	6	4.38	N.S.
Why working	4	2.27	N.S.
Mother's occupation	6	6.10	N.S.

Table M-4

ANOVA Summary Table for Sex-Role Questionnaires and ACM by SI Behavior Pattern

Source	df	Mean square	*F* value	Prob. *F*
Brogan and Kutner's Sex-Role Orientation	2	6.50	.02	N.S.
Error	77	277.07		
Bem's Sex-Role Inventory: Femininity	2	.08	.36	N.S.
Error	77	.22		
Bem's Sex-Role Inventory: Masculinity	2	.63	1.50	N.S.
Error	77	.42		
Assertive Competence Motivation	2	.75	.07	N.S.
Error	77	10.65		

Table M-5

Mean Ranks of PAS Accomplishments by SI Behavior Pattern

Achievement	Type A1 N = 24	Type A2 N = 42	Type B N = 14	Chi-square χ^2	Prob.
		Past year			
Career	36.60	42.76	40.39	1.09	N.S.
Family-affiliation	36.79	39.51	49.82	2.99	N.S.
Individual growth	44.85	38.33	39.54	1.33	N.S.
Other	44.31	38.81	39.04	1.03	N.S.
Competitive activities/ hobbies	41.38	39.37	42.39	0.41	N.S.
Financial purchase	40.88	40.32	40.39	0.04	N.S.
Community service	41.17	42.12	34.50	3.00	N.S.
Vacationing	40.81	38.40	46.25	5.77	N.S.
Geographical move	44.27	39.35	37.50	4.65	N.S.
		College to present			
Career	46.29	38.10	37.79	2.16	N.S.
Family-affiliation	35.79	41.95	44.21	1.54	N.S.
Individual growth	34.63	43.62	41.21	3.18	N.S.
Other	43.42	40.55	35.36	1.34	N.S.
Competitive activities/ hobbies	45.08	37.83	40.64	4.15	N.S.
Financial purchase	40.46	41.32	38.11	0.61	N.S.
Community service	39.73	41.77	38.00	1.79	N.S.
Vacationing	43.02	39.39	39.50	1.49	N.S.
Geographical move	40.13	40.39	41.46	0.22	N.S.
		Whole life			
Career	49.81	36.10	37.75	5.62	N.S.
Family-affiliation	39.88	40.55	41.53	0.04	N.S.
Individual growth	35.50	42.32	43.61	1.79	N.S.
Other	40.54	42.21	35.29	1.26	N.S.
Competitive activities/ hobbies	44.29	40.13	35.11	2.20	N.S.
Financial purchase	39.00	41.86	39.00	2.78	N.S.
Community service	39.69	41.80	38.00	1.83	N.S.
Vacationing	38.50	40.40	44.21	3.76	N.S.
Geographical move	39.50	40.44	42.39	1.88	N.S.

Table M-6

ANOVA Summary Table for JAS Components and Blood Pressure by SI Behavior Pattern

Source	df	Mean square	*F* value	Prob. *F*
JAS Type A	2	163.39	1.80	N.S.
Error	77	80.81		
JAS Speed and Impatience	2	141.50	1.77	N.S.
Error	77	79.82		
JAS Job Involvement	2	21.11	.33	N.S.
Error	77	64.15		
JAS Hard-Driving	2	217.53	2.05	N.S.
Error	77	106.06		
Systolic blood pressure	2	143.38	1.25	N.S.
Error	77	114.38		
Diastolic blood pressure	2	87.33	1.62	N.S.
Error	77	53.85		

APPENDIX N

JENKINS ACTIVITY SURVEY DATA

Table N-1

Contingency Table Summary for Background Information by JAS Type A Behavior Pattern

Variable	df	Chi-square	
		χ^2	Prob.
Marital status	2	1.12	N.S.
Occupational category	6	9.26	N.S.
Why working	4	1.83	N.S.
Mother's occupation	6	6.11	N.S.

Table N-2

ANOVA Summary Table for Background Information
by JAS Type A Behavior Pattern

Source	df	Mean square	F value	Prob. F
Participant's age	2	51.04	2.93	N.S.
Error	77	17.40		
Number of children	2	.10	.07	N.S.
Error	60	1.44		
Hours worked per week	2	450.73	5.43	.007
Error	57	83.00		
Husband's occupation	2	59.37	.28	N.S.
Error	61	210.47		
Father's occupation	2	1190.56	2.23	N.S.
Error	76	532.84		

Table N-3

t-Test Summary Table for Hours Worked per Week
by JAS Type A Behavior Pattern

Variable	*t* Value	df	Prob. *t*
Hours worked per week:			
Type A vs. Type X	1.87	50	N.S.
Type A vs. Type B	5.18	24.5	.0001
Type X vs. Type B	1.85	22.5	N.S.

Table N-4

Kruskal-Wallis One-Way ANOVA for Background Information by JAS Type A Behavior Pattern

	Type A	Type X	Type B	Chi-square (df = 2)	
Variable	Mean rank	Mean rank	Mean rank	χ^2	Prob.
Participant's education	46.64	33.57	31.14	7.67	N.S.
Hours volunteer work per week	42.96	34.98	40.89	1.73	N.S.
Father's education	44.10	35.64	36.21	2.55	N.S.
Mother's education	42.28	34.40	43.93	2.13	N.S.
Husband's education	34.61	29.53	30.13	1.16	N.S.

Table N-5

Wilcoxon Rank Sums for Participant's Education
by JAS Type A Behavior Pattern

Type A	Type X	Type B	*z* Score	Prob. *z*
36.99	26.02		-2.22	.03
32.66		21.46	-2.19	.03
	18.55	17.18	-.38	N.S.

Table N-6

ANOVA Summary Table for Sex-Role Questionnaires and ACM by JAS Type A Behavior Pattern

Source	df	Mean square	F value	Prob. F
Brogan and Kutner's Sex-Role Orientation	2	33.11	.12	N.S.
Error	77	276.38		
Bem's Sex-Role Inventory: Femininity	2	.26	1.18	N.S.
Error	77	.22		
Bem's Sex-Role Inventory: Masculinity	2	4.65	14.63	.0001
Error	77	.32		
Assertive Competence Motivation	2	20.73	2.05	N.S.
Error	77	10.14		

Table N-7

t-Test Summary Table for Bem's Sex-Role Inventory
by JAS Type A Behavior Pattern

Variable	*t* Value	df	Prob. *t*
Type A vs. Type X	3.60	64	.0006
Type A vs. Type B	4.97	57	.0001
Type B vs. Type X	1.58	33	N.S.

Table N-8

Mean Ranks of PAS Accomplishments by JAS Type A Behavior Pattern

Achievement	Type A N = 45	Type X N = 21	Type B N = 14	Chi-square χ^2	Prob.
		Past year			
Career	41.03	45.00	32.04	2.71	N.S.
Family-affiliation	40.69	37.71	44.07	.65	N.S.
Individual growth	39.14	37.45	49.43	2.79	N.S.
Other	41.64	40.02	37.54	.39	N.S.
Competitive activities/ hobbies	35.59	46.00	48.04	8.39	.01
Financial purchase	41.10	41.21	37.50	1.36	N.S.
Community service	41.94	37.90	39.75	1.17	N.S.
Vacationing	40.99	41.45	37.50	1.38	N.S.
Geographical move	41.91	39.48	37.50	2.11	N.S.
		College to present			
Career	43.04	42.07	29.96	3.55	N.S.
Family-affiliation	40.06	34.74	50.57	4.03	N.S.
Individual growth	38.28	44.38	41.82	1.44	N.S.
Other	39.09	40.79	44.61	.76	N.S.
Competitive activities/ hobbies	39.49	44.60	37.61	2.66	N.S.
Financial purchase	40.09	37.24	46.71	4.33	N.S.
Community service	40.66	39.98	40.79	.08	N.S.
Vacationing	39.88	44.50	36.50	3.95	N.S.
Geographical move	40.27	38.50	44.25	3.68	N.S.
		Whole life			
Career	39.28	45.52	36.89	1.46	N.S.
Family-affiliation	41.40	32.79	49.18	4.41	N.S.
Individual growth	39.04	42.50	42.18	.45	N.S.
Other	37.90	43.55	44.29	1.75	N.S.
Competitive activities/ hobbies	39.09	41.21	43.96	.78	N.S.
Financial purchase	40.77	39.00	41.89	1.33	N.S.
Community service	40.68	39.93	40.79	.10	N.S.
Vacationing	38.50	44.26	41.29	6.31	.04
Geographical move	39.50	41.38	42.39	2.82	N.S.

Table N-9

Comparisons of JAS Type A Behavior Pattern Based on Rank Sums of PAS Achievements

Achievements	Type A vs. Type X	Type A vs. Type B	Type X vs. Type B
Competitive activities/ hobbies (past year)	10.41	12.45	2.04
Vacationing (whole life)	5.76	2.79	2.97

*p .05 (A, X) = 16.57
p .05 (A, B) = 12.63
p .05 (X, B) = 15.28

Table N-10

ANOVA Summary Table for JAS Components and Blood Pressure by JAS Type A Behavior Pattern

Source	df	Mean square	F value	Prob. F
JAS Speed and Impatience	2	1019.67	17.89	.0001
Error	77			
JAS Job Involvement	2	470.72	8.97	.0003
Error	77	52.47		
JAS Hard-Driving	2	1223.67	15.31	.0001
Error	77	79.93		
Systolic blood pressure	2	10.35	.09	N.S.
Error	77	117.83		
Diastolic blood pressure	2	37.22	.67	N.S.
Error	77	55.16		

Table N-11

t-Test Summary Table for JAS Components
by JAS Type A Behavior Pattern

Variable	t Value	df	Prob. t
Speed and Impatience:			
Type A vs. Type B	5.66	57	.0001
Type A vs. Type X	2.96	64	.004
Type B vs. Type X	3.02	33	.005
Job Involvement:			
Type A vs. Type B	3.84	57	.0003
Type A vs. Type X	3.25	64	.002
Type B vs. Type X	.58	33	N.S.
Hard-Driving:			
Type A vs. Type B	4.80	57	.0001
Type A vs. Type X	3.34	64	.001
Type B vs. Type X	2.34	33	.02

VITA

Maria McArthur Abercrombie was born in El Paso, Texas, on April 25, 1957. She attended elementary school in Tulsa, Oklahoma, and was graduated from Edison High School in May 1974. The following September she entered the University of Arkansas, Fayetteville, where she received a four year cello scholarship awarded by the University of Arkansas and the Symphony Society. In May 1978 she graduated with Honors and received a Bachelor of Arts degree in Psychology. In the fall of 1978 she entered the Graduate School of The University of Tennessee, Knoxville. She completed her Clinical Psychology predoctoral internship at the Veterans Administration Medical Center in Houston, Texas, from September 1982 through August 1983. She received the Doctor of Philosophy degree with a major in Psychology in December 1983.

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