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AN ANALYSIS OF COPING STRATEGIES

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SELECTED DIMENSIONS OF CORONARY-PRONE BEHAVIOR: AN ANALYSIS OF COPING STRATEGIES

By

Joyce Ann Baxter

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ABSTRACT

SELECTED DIMENSIONS IN CORONARY-PRONE BEHAVIOR:
AN ANALYSIS OF COPING STRATEGIES

By

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Relationships of Type A behavior patterns to active and to defensive coping strategies were examined in males (ages 30 to 59) with acute and chronic disease processes: coronary heart disease, various non-coronary disorders and traumatic orthopedic injury. Self-disclosure was investigated as one coping strategy. Self-report and observer ratings of these behaviors were made after a measure of Type A behavior was obtained. Contrary to published findings, the coronary groups did not obtain higher mean scores than the hospitalized non-coronary groups on Type A behavior. Although no other group differences were found, when subjects were re-classified according to behavior pattern, Type A's reported more past self-disclosure than B's. No significant relationships were found between Type A behavior and predicted future self-disclosure. Mean self-disclosure scores and active coping behaviors were positively associated.

The findings argue against the notion of "coping style" and support the concept of "coping strategies" — stimulus-specific behaviors which are influenced by the meaning of external environmental events as appraised by an individual. Whereas no significant differences were found between the Type A and B groups on coping style, differences were found relative to situational contexts. On a self-report measure and in an interview, individuals manifesting Type A behaviors tended to select active, interpersonal coping strategies. In certain situational contexts, defensive coping strategies may be inversely related to willingness to self-disclose to a stranger. Ways in which social position and demand characteristics of the task may have influenced subject performance are discussed. The influence of behavior patterns as an independent risk factor which may contribute to the development of coronary heart disease can be determined only by further study in both naturalistic and experimental settings.

To a rogue and special colleague-companion
who is the calming factor in my life.

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My deepest thanks go to Dozier W. Thornton, Ph.D. who has contributed uniquely to my growth as a psychologist and a clinician.

I greatly appreciate the assistance of Janice Pettingill, R.N., B.S.N., who was instrumental in obtaining permission for this study to be done and of Luis F. Herrera, M.D., who willingly gave his time and expertise to advise and answer questions. I am also grateful to the nursing and medical staffs at Edward W. Sparrow Hospital for their approval of and cooperation in this study.

Foremost, my heartfelt thanks are extended to those individuals who, at a time of life crisis, were willing to disclose a part of themselves to me.

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> I tend to be a loner and I tend not to have any close friends.
>
> Subject #9

> Provided there's nothing wrong with me . . . I'm going to go right back into that situation because that's the only salvation I've got. I'm gonna do it if it kills me.
>
> Subject #32

> I ain't had no problems with a close friend. I had problems but I knew what to do. That takes care of that one.
>
> Subject #45

> I'm so tenacious a human being I just couldn't give up without knowing for damn sure in the long run that I'd done everything I could do to make it right again. And when I had a heart attack I realized I couldn't make it right.
>
> Subject #34

Introduction

Overview

Each year in the United States approximately one million people die from cardiovascular diseases. Coronary heart disease (CHD) is the major contributor to the overall cardiovascular death rate, killing approximately 680,000 individuals in 1975. Two-thirds of these deaths occurred before the victims sought medical consultation or reached a hospital for definitive treatment (Kolata & Marx, 1976).

It has long been recognized that CHD has a multi-factorial etiology (Jenkins, 1971). The notion that emotional stress is one of the most frequent factors contributing to CHD with myocardial

infarction (MI) in predisposed individuals is gaining wide acceptance in the scientific community. As Dodge and Martin (1970) have articulated, the chronic diseases of our times are etiologically linked with excessive stress which, in turn, is linked to the organization of modern technological societies. Notwithstanding, little is known about the contribution of behavioral stressors to the actual pathogenesis of CHD. These processes require considerable exploration before any hypothesis about causation can be seriously tested (cf. Suchman, 1967). Although interesting results have been obtained thus far in this area of research, there is a poverty of theories or more general hypotheses by which the findings may be organized. Such is the problem as outlined by Graham (1972) whose treatise on psychosomatic medicine excludes coronary artery disease with MI because current knowledge is too confused to permit reasonably clear and brief exposition.

The present inquiry explores the relationship of Type A and Type B behavior patterns to coping strategies in individuals with and without CHD. Furthermore, it examines self-disclosure — the process by which one individual makes himself/herself known to another — as one possible coping strategy. It does not explore the reasons <u>why</u> persons facing comparable stressors respond differently or why some remain healthy while others develop CHD or sundry other diseases. Nor does it document the exhaustive literature that has accrued from studies associating emotional stress and CHD in a variety of animals, including man. Rather, it describes the nature of coping and adaptation to emotional stresses as experienced by selected individuals

with and without CHD.

The main topic of this thesis necessarily transects many research areas. Although the present study is directly related to only three of these areas — coronary-prone behavior patterns, coping responses and self-disclosure - there are several areas which are tangentially relevant. Research findings on stress, life events, coronary risk factors and illness behavior are briefly reviewed not only to place them in perspective, but, also, to identify recent reviews and to document focal areas of controversy.

The theoretical basis for this study consists of three major assumptions. First, coping and adaptation are viewed as a transactive process between the individual and his/her environment. It is of utmost importance to consider this transactional model of human behavior. The process of adaptation, as Mechnic (1976a) has so cogently described it, depends not only upon the "degree of fit between the skills and capacities of individuals and their relevant supporting group structures, but also on the types of challenges with which they are confronted" (p. 2).

Dubos (1965) has summarized the stress-illness relationship from the holistic and ecological point of view that is increasingly adopted in modern medicine. Of the many principles which have evolved from his analysis, three have direct relevance to the present study: (1) the "response" of an individual is conditioned by his evolutionary and experimental past; (2) health and disease represent adjustments of the human organism to complex internal and external environments; and (3) failure of an organism to respond adaptively to its

environment results in disease.

Dubos (1965) highlights the need to conceptualize the etiology of any disease, not as a single causative agent, but, rather, as a constellation of factors. This concept represents the second major assumption underlying the present inquiry. This study attempts to demonstrate that simplistic interpretations based on research findings in a single discipline do not adequately account for the known facts. The research strategy adopted in the present study rests on the assumption that a better understanding of the causes underlying CHD can be gained by integrating within a common framework concepts and methods from psychology, psychophysiology, environmental and organismic medicine.

If we look at behavior as a result of a complex interaction between an organism and its environment, the emphasis placed by Dubos (1965) on the critical role of the cerebral cortex in health and in disease becomes clearer. Survival for humans depends upon their abilities to adapt to new situations. Yet this ability to cope hasn't evolved as rapidly as abilities to create an ecosystem which places excessive demands upon us. Thus, many of the stresses which currently confront us are of our own making.

Among the highest functions of the central nervous system are those functions which (1) permit response to symbolic stimuli as substitutes for biological events and (2) those functions that "enable man, under circumstances of duress, to integrate elaborate behavior patterns of a defensive or protective nature that are appropriate, adequate, socially acceptable, and sustained" (Wolff, 1968, pp. 175-176). Equally important is the potential to eliminate

responses once they are no longer appropriate.

Civilization has brought with it an increased likelihood that humans will encounter symbolic stimuli which signal potential threat. Responses to any given psychosocial stimulus may vary widely from one individual to another. The variety of adaptations is legion depending on the mediating cognitive processes of appraisal and reappraisal by which an individual elaborates and evaluates information about the adaptive significance of an environmental event. From this vantage point, noxious stimuli owe their force not to intrinsic qualities, but to the meaning they have for the person. It is the capacity to respond to symbolic stimuli as well as to eliminate inappropriate responses which constitutes the third assumption which underlies this study; it forms the basis for the connection between the behavioral sciences and medicine.

The implication for CHD is not that its etiology can be traced directly to psychological conflicts, but, rather, that the disease respresents a failure to eliminate responses which have become maladaptive. An individual coping strategy may represent a characteristic Weltanschauung, yet difficulty may arise when the pattern is strained. In the words of Jourard (1971a), an individual is then challenged to "reinvent himself" — that is, to modify his behavior patterns.

Coping and threat appraisal are areas with important medical and social implications. They affect not only the incidence and prevalence of CHD but compliance with treatment programs as well. An understanding of the processes involved is mandatory before

effective intervention programs can be implemented. The present research contributes to that understanding. Hope for "reinventing" oneself is compatible with realistic threat appraisal and active efforts aimed at successful adaptation and mastery of life challenges.

Stress Research

Mason (1975) describes stress research as having derived its historical development from two separate disciplines: the study of psychosocial stimuli by social scientists and the study of physical and humoral stimuli by physiologists and biologists. Adaptive reactions to stress as noted in Cannon's (1928) early observations represent an attempt to integrate findings in an interdisciplinary fashion. His views about emotional influences on physiological processes were further popularized by Selye (1976a, 1976b). Selye's formulation of the "general adaptation syndrome" — a set of non-specific physiological reactions to various noxious environmental agents — motivated an era of research into psychogenic stressors and into an emergency action pattern of behavior. The so-called "fight-flight mechanism" which occurs upon activation of the pituitary-adrenal-cortical system was found to be adaptive in stress situations of short duration. A number of authors hypothesize, however, that when the emergency pattern is adopted as a way of life, it becomes maladaptive and predisposes to illness (Dodge & Martin, 1970; Dubos, 1965; Wolf, Pfeiffer, Ripley, Winter & Wolff, 1948).

Perhaps it is largely due to Selye's conceptualization of emotional, physical and humoral stimuli as stressors that stress has been more recently regarded as a unitary phenomena of which

psychological stress is but one component (Mason, 1975). Most bodily organs are influenced by central integrative action through autonomic and endocrine pathways from the interpretive areas of the cerebral cortex. This fact lends support to the hypothesis that symbolic stimuli either independently or by interacting with other kinds of stimuli have potential to activate disease mechanisms (Graham, 1972; Lazarus, 1966; VanEgeren, Note 1; Wardwell & Bahnson, 1973; Wolff, 1968).

According to social learning theory, man's perception and labeling of threat and stress influences his efforts to adapt physiologically and behaviorally as readily as to an actual threat or stressor (Mahoney, 1974). Consequent to this view, man's cognitive skills permit anticipatory, insightful and foresightful behavior. Once this defensive behavior is established, it incurs self-reinforcing properties to reduce stress. This process is exceedingly difficult to eliminate as the following example from Bandura (1976) illustrates:

> A compulsive who, when asked by a psychiatrist why he incessantly snapped his fingers, replied that it kept ferocious lions away. When informed that obviously there were no lions in the vicinity, the compulsive client replied, 'See, it works' (p. 12).

Thus far, most theories of stress have focused on energy activation and sympathetic responses to stress. More recently, there has been evidence reported that suggests activation of the parasympathetic nervous system in response to stressors (Cannon, 1942; Engel, 1968; Greene, Goldstein & Moss, 1972; Hofer, 1970; Overmier, 1968; Richter, 1957). This response is characterized by energy conservation, withdrawal, lowered metabolism, and a tendency towards

repair. These findings suggest a cognitive element acting to promote a set of physiological responses that can lead to sudden death. The relevance of these reports to CHD with MI will receive further consideration in the sections on coronary risk factors and coping reactions.

Whereas Selye (1976a) placed emphasis on a developing physiological theory of stress, other researchers (Averill & Rosenn, 1972; Gal & Lazarus, 1975; Monat, 1976) have focused on psychological and behavioral responses which are activated to mitigate or eliminate stressful stimuli. As a leading exponent in this area, Lazarus (1966) draws attention to the constant interplay taking place between the processes of threat appraisal, cognitive functions, and physiological responses. As he articulates it, stress-relevant behavior is increasingly more dependent upon learning than upon instinctive mechanisms as we move up the phylogenetic scale. It is his contention that coping with threat involves autonomic as well as behavioral patterns of reaction. Thus, perceptual and interpretive processes provide a link between the external event and emotional, neurohormonal, and cardiovascular responses. Monat and Lazarus (1977) posit three ways in which stress might lead to somatic illness: (1) by employing coping activities which are damaging to health or affect health-related behavior (diet, exercise, smoking, work overload); (2) by disruption of tissue function through neurohormonal influences — especially chronic activation of the sympathetic nervous system without parasympathetic rebound (the relaxation phase); or (3) psychological or socio-cultural factors may lead an individual to avoid or minimize

the significance of various symptoms.

Research on Life Events

Studies abound in the literature relating stress, life events, social, and psychological factors to the onset of illness. The focal point of life events research is the temporal association between a recent increase in family, personal, occupational, physical or financial events which demand socially adaptive responses. In 1942, Cannon described instances of "voodoo" death which he attributed to a state of shock (in the surgical sense) "induced by prolonged and tense emotion" (1942, p. 179). Frankl (1963) found people to sicken more readily in circumstances in which their morale was low and they felt that life had no meaning. Jourard (1971a) spoke of society's "invitation to die" extended to males who were no longer regarded as making a significant contribution to society.

Research on the role of stressful life events as precipitating factors influencing the timing of illness onset but not the type of illness is reviewed by Rabkin and Struening (1976). There is a rich body of anecdotal and experimental evidence which suggests that life events do influence disease onset notwithstanding the methodological problems associated with the measurement instruments currently in use.

Holmes and Rahe and their colleagues (Gunderson & Rahe, 1974; Holmes & Rahe, 1967; Rahe, Bennett, Siltanen & Arthur, 1973; Theorell, 1974; Theorell & Rahe, 1975) have pioneered empirical investigation in the field. Pertinent to coping strategies in coronary-prone individuals is the research by Rahe et al. (1973) which investigated

recent life changes in individuals experiencing MI. Using the Schedule of Recent Experience, respondents indicated which, if any, life changes they had experienced in the past two years and in which three-month interval. These data were collected from survivors of MI and from spouses of individuals who had died suddenly following an acute MI. Respondents surviving MI and victims of sudden coronary death experienced a significant increase in recent life changes during the six month period one year earlier. Victims of sudden death were reported to have had the highest increases in recent life changes; individuals who survived the initial insult, but who died within 28 days of the acute coronory episode were reported next highest, whereas the survivors of MI reported the smallest increases. The investigators concluded that a relative increase in life change unit totals appears to herald the onset of MI. Furthermore, they proposed that had respondents not experienced significant increases in demands for social adaptation, they might not have developed the MI or succumbed to death at that particular time.

Schmale (1958) noted that in one sample of patients admitted to a general hospital, a majority reported some depressing disruption in interpersonal relationships prior to their onset of symptoms. Engel (1968) reported similar findings. He described a study of life settings in which illness was preceded by a period of psychological disturbance in which the individual feels unable to cope, experienced as "hopelessness" or "helplessness." Retrospective studies of sudden death from MI by Greene, Goldstein and Moss (1972) and Goldstein, Moss and Greene (1972) tend to support these views. They

reported sudden death from MI occurring in men who had been depressed for periods of one week up to several months. These investigators found that "sudden death then occurred in a setting of acute arousal engendered by increased work and activity or by circumstances precipitating reactions of anxiety or anger" (Greene et al., 1972, p. 725).

Furthermore, it has been suggested that the prospect of being ill was perceived as helplessness by these individuals and that they felt it impermissible to accept this role (Greene et al., 1972). These findings may be interpreted in terms of differing perceptions of threat imposed by the lack of or perceived lack of environmental control — a phenomena which Lazarus (1966) has described as an "inactive coping-reaction" and which Seligman (1975) called "learned helplessness". Seligman (1975) proposed the learned helplessness hypothesis to account for the relationship between particular behavior and its consequences. He argues that when events are uncontrollable, an organism learns that its behavior is independent of environmental outcomes. This learning is said to interfere with subsequent response initiation because low expectation of reinforcement obtains through proactive impairment of learning. This learning is said to produce emotional, motivational and cognitive effects of uncontrollability.

The learned helplessness model of depression claims that a belief in independence between responding and reinforcement is central to the etiology, symptomatology and resolution of reactive depression. Previous research has shown that behavioral and

psychophysiological response to environmental events depends upon an organism's history of success or failure in controlling environmental outcomes (Glass & Singer, 1972; Hiroto, 1974; Hiroto & Seligman, 1975; Krantz, Glass & Snyder, 1974; Maier & Seligman, 1976; cf. Levis, 1976; Weiss, Glazer & Pohorecky, 1975).

To the degree that parallels may be drawn between helplessness as Seligman conceives it and more traditional theories of depression, one can only speculate at this time as to whether significant increases in life change events induce subjective feelings of helplessness. Whether victims of sudden death from MI were either experiencing a state of helplessness or warding off such a state by minimizing or ignoring symptoms of cardiac distress warrants further empirical investigation.

Classic Risk Factors in Coronary Heart Disease

Until as recently as the mid 1960's, clinical and epidemiological research has been intensively focused on the validation of the classic risk factors through to predispose individuals to CHD. These have included sex, age, heredity, diabetes, obesity, elevated serum lipid levels, hypertension, cigarette smoking and physical indolence. Social and psychological factors were implicated by some investigators, but were generally regarded as being spurious or unsubstantiated as independent risk factors (Caffrey, 1967; Jenkins, 1971), a point of view which still persists today (Kolata & Marx, 1976). "Risk-increasing behaviors" (Christian's term, 1968) such as cigarette smoking, overeating, lack of physical exercise and illness behavior have <u>not</u> traditionally been examined from a behavioral or ecological

perspective. Consequently, identification of behavioral factors associated with stress and CHD has been of a broadly generalized nature, often argued by analogy. Syme (1967) and Jenkins (1967) advocate broader use of multivariate models to correct this limitation.

Predicting new cases of CHD from the classic risk factors is problematic because no one cause-effect relationship can be demonstrated. This highlights the complexity of the problem which confronts researchers. Data from the Framingham study (Kannel, Schwartz & McNamara, 1969) indicate that men with one of three risk factors (high serum cholesterol, hypertension and cigarette smoking) have 1.9 times the risk of CHD as compared with those who have none; the simultaneous presence of two or three risk factors increases this risk 3.4 and 10.6 times respectively. In light of these data, it is surprising to discover that these risk factors explain only 25% of the variance in cases of CHD in middle-aged men (Jenkins, 1971).

Lynch (1977) has criticized the research design of the Framingham study on two counts: (1) it initially neglected psychosocial risk factors and de-emphasized social milieu as a possible contributing factor and (2) the community under study may not have been representative of American life in 1948 or be so now.

Most people with CHD do not have diabetes, serum cholesterol above 250 mg per 100 ml or hypertension (Rosenman, 1968). Prospective studies have not demonstrated dietary differences between those who subsequently develop CHD and those who remain free (Paul, Lepper, Phelan, Dupertuis, MacMillan, McKean & Park, 1963). Genetic factors

alone do not account for the rapid escalation of CHD to epidemic proportions. Studies of hereditary and environmental influences in concordant and discordant twins have further pointed toward the impact of the environment (Liljefors, 1970; Liljefors & Rahe, 1970). The so-called relative immunity to CHD in premenopausal females is not enjoyed in Italian (Keys, 1954), Mexican (Tamayo, Brandt & Ontiveros, 1961), African or Black American females (Meyer, Pepler, Meyer & Theron, 1964; Rhomas, Black & Lee, 1957). The limitations of current epidemiological knowledge of etiology and modes of prevention have been recently reviewed (Epstein, 1965; Kolata & Marx, 1976; Simborg, 1970).

More recent evidence strongly suggests the presence of other etiological factors. A number of investigators have argued that behavior pattern may make a larger contribution to CHD risk than sex per se. Jourard (1971a) linked sex differential in mortality with behaviors which are encouraged and accepted as part of the stereotypic male role, which he termed the "lethality of the male role". He thought this role to be characterized by dissembling, by a reluctance to make oneself known personally to others and by a persistence in modes of behavior which are adaptive to urbanized Western society but, ironically, contribute to illness proneness and early death as well. The problem as conceptualized by Jourard is twofold: individuals who conform to traditional male roles have learned to ignore minor somatic illness and they do not readily recognize early signs that their present behavior patterns are generating illness.

Waldron (1976) argues that involvement of men in paid jobs and in "aggressive competitive roles, in contrast to the greater orientation of women toward family and less competitive, more supportive roles" is an important cause of higher CHD in men (p. 5). Data from other empirical investigations support both the contention that cultural pressures and industralization have greatly influenced the epidemic proportions of CHD, and that sex differences in CHD are accounted for more by behavioral than by hormonal or genetic factors (Bengtsson, 1973; Dentan, 1968; Howard, Cunningham & Rechnitzer, 1976; Rosenman, 1974). In general the more consistent findings appear to be higher incidence of CHD in urban, industrialized settings; in the aged; in men than women; in whites than blacks in the United States; and in environments characterized by sociocultural incongruity and change (Dohrenwend, 1967; Smith, 1967).

With increased methodological sophistication, the study of psychosocial pressure as a precursor of CHD accelerated in the last two decades. It is clearly beyond the scope of the present study to review the social and behavioral conditions that appear to put individuals at higher risk. The reader is referred to Jenkins (1971) and others (Epstein, 1965; Gentry & Williams, 1975; Simborg, 1970) for detailed analysis of these issues.

The Coronary-Prone Behavior Pattern (Type A)

For a number of years, a search for personality correlates of CHD dominated psychosocial investigations of this disease process. Numerous students in this field have reported a wide variety of conflicts, personality traits and behaviors to be associated with CHD

(Dongier, 1974; Dunbar, 1943; Kemple, 1945; Menninger & Menninger, 1936; Ostfield, Lebovits, Shekelle & Paul, 1964). Trait-oriented instruments have included the Rosenzweig Picture-Frustration Test (Mordkoff & Golas, 1968), the Guilford-Zimmerman Temperament Survey (Altland & Weitzman, 1966), the MMPI (Lebovits, Shekelle, Ostfield & Oglesby, 1967), the 16 PF (Caffrey, 1968), and the Rorschach (Blatt & Feirstein, 1977).

Individuals with clinical CHD have been reported to be more neurotic (Lebovits et al., 1967), more anxious (Ostfield et al., 1964; cf. Caffrey, 1967), more stoic (Arthur, 1969), and strongly aggressive and goal-oriented (Menninger & Menninger, 1936). Dongier (1974) describes these individuals as having obsessive-compulsive character neurosis while others have reported excessive use of denial and repression (Dreyfuss, Dasberg & Assael, 1969; Hackett & Cassem, 1970; Russek, 1967). These data reflect a strong psychoanalytic orientation and have been extensively reviewed by Caffrey (1967) and more recently by Jenkins (1971). These authors point out a number of methodological limitations in the research area which include use of instruments which have questionable validity, generalization from retrospective to prospective studies, no control groups or inadequate matching in the sample population.

The idea of a coronary-prone behavior pattern is not new — Sir William Osler (1910) described such a pattern in the nineteenth century. A more specific formulation has been proposed by Friedman and Rosenman (1960) who implicate Type A behavior both in the development and clinical sequelae of CHD. As the major exponents,

Rosenman, Friedman and their co-workers must be credited for their empirical studies which have documented the behavior pattern. Through psychophysiological testing and, later, through semi-structured interviews (Friedman & Rosenman, 1960; Rosenman, Friedman, Straus, Wurm, Kositchek, Hahn & Werthessen, 1964) they identified certain verbal and non-verbal behaviors which prevailed in their patients with a medical history of MI. Non-verbal behavior included hyperalertness, fist clenching, thoracic breathing, tense facial muscles and explosive speech. These individuals tended to be aggressive, competitive, hard-driving and goal-oriented. They were restless and impatient, and reported feeling pressured by time constraints and deadlines. They strove to achieve, actively sought positions of responsibility and reported intense job dedication -- often working on two or more jobs at one time. These individuals were said to manifest a "Type A behavior pattern." Frequently this behavior is regarded as a source of pride by the individual because it is highly rewarded in Western society.

The obverse of this pattern is designated "Type B behavior," marked by freedom from such enhanced behavioral patterns. Individuals with a Type B behavior pattern may exhibit some Type A characteristics but not in such an exaggerated form. For example, they may experience short-term pressure from deadlines, but not a chronic sense of time urgency. They do not differ from Type A's in achievement, but accomplish their goals without the compulsive striving and readiness to compete that is characteristic of Type A behavior. They generally are not easily aroused to anger and reflect a

relatively relaxed demeanor.

The two behavior patterns aren't mutually exclusive. Individuals who manifest the Type B behavior pattern may manifest some Type A characteristics. Type A individuals often do not mainifest all Type A behaviors. Rather, persons assessed by the standardized interview as exhibiting Type A or B behavior patterns may be further subdivided, depending on whether their respective overt behavior patterns are fully or incompletely developed.

This researcher's view of the behavior pattern types is illustrated in Figure 1. By putting it in diagrammatic form, an attempt is made to clarify the view that these behaviors occur on a continuum. Figure 1 does not represent an exhaustive description of the behaviors characteristic of the extreme behavioral responses. Rather, the critical items which are manifested in the fully developed behavior types are identified. Those individuals who manifest extreme Type A or Type B behaviors are considered to be "fully developed." They are denoted "A_1" and "B_4" respectively. The majority of persons fall into the intermediate categories A_2 and B_3 depending on whether Type A or Type B behaviors are more in evidence.

After the present research was proposed and conducted, Rosenman (1978) reported two changes in the rating scale for the interview method of assessment: (1) the addition of a "Type X" category for those individuals who exhibit almost equally some of the behaviors characteristic of the Type A and Type B behavior patterns — the so-called "blended response pattern" — and (2) the collapse of

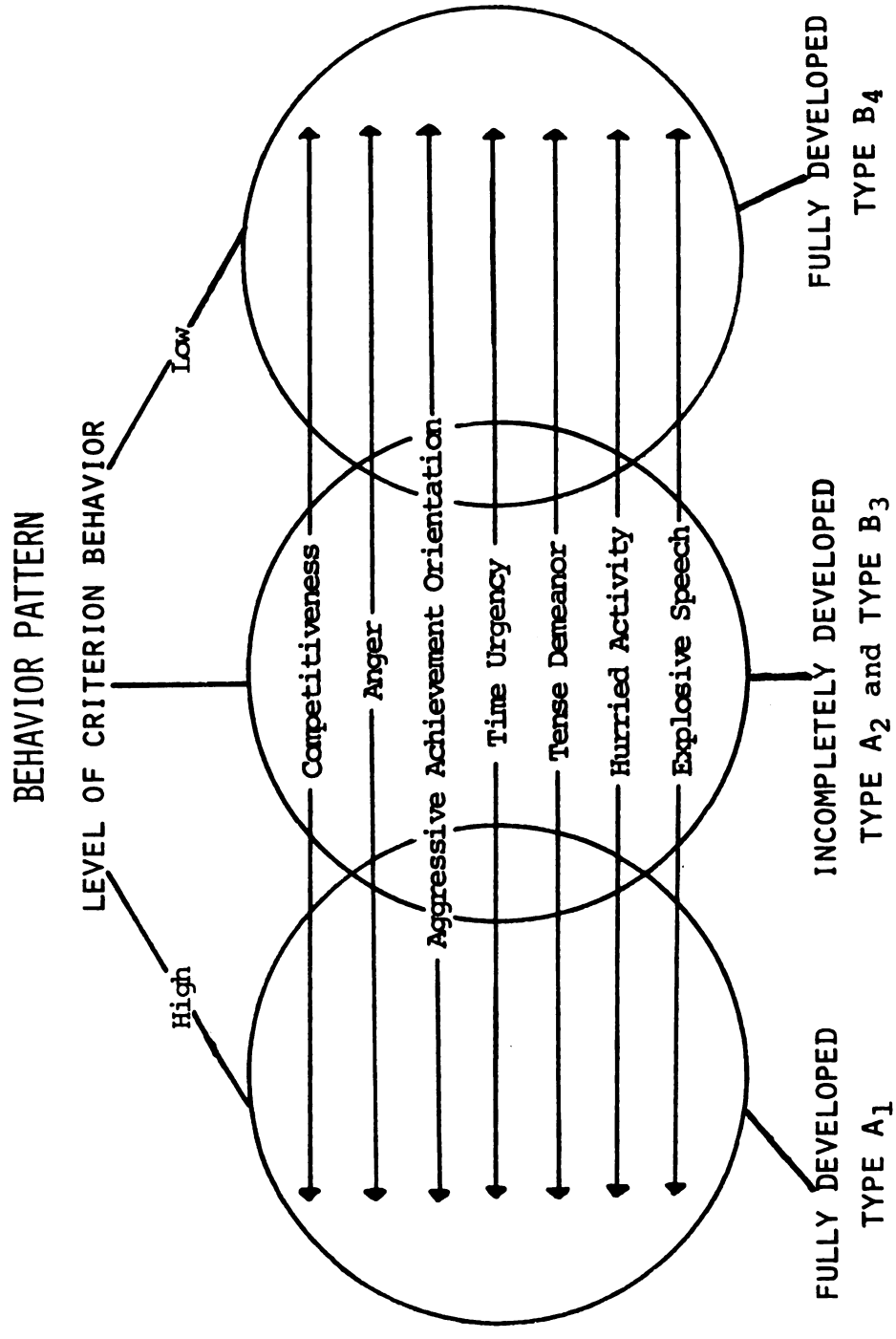

FIGURE 1. Behavior Pattern Types Conceptualized on a Continuum.

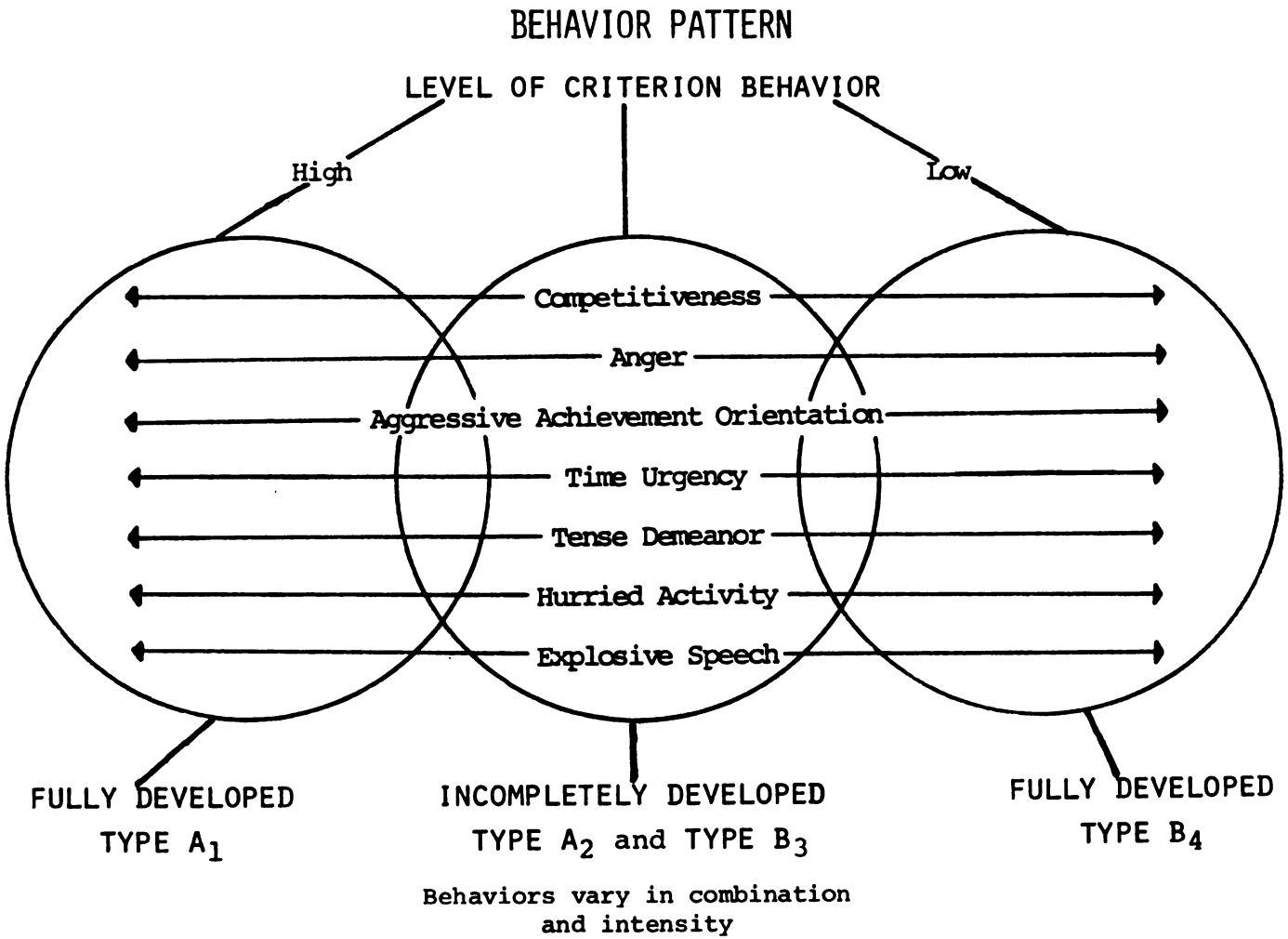

FIGURE 1. Behavior Pattern Types Conceptualized on a Continuum.

Types B_3 and B_4 into one category — the Type B response pattern. Although these changes may be useful in assessment, they still represent an invalid attempt to force a continuously varying set of behaviors into discrete and artificial categories.

The outstanding differences between the former search for personality correlates and the coronary-prone behavior pattern currently proposed by Friedman and Rosenman (1960) are that (1) the latter has been empirically demonstrated to relate to both prevalence and incidence of clinical CHD in prospective as well as retrospective studies; (2) it is more behaviorally anchored; and (3) the model for the behavior pattern is similar to the diathesis-stress model for schizophrenia (Rosenthal, 1971). It is neither a personality trait nor an invariant coping style, but, rather, the effect of an environmental stimulus on a biologically predisposed person. It is said to emerge only when appropriate environmental challenges interact with susceptible individuals to elicit a particular complex of behavioral responses. Therefore it is thought to be amenable to modification. Rosenman (1974) suggests that when certain challenges in the environment became severe enough, any individual might react in a manner consistent with Type A behavior.

Currently no empirical evidence exists about base rates of behavior patterns A and B in the population. Rosenman and his co-workers (Rosenman, Friedman, Straus, Wurm, Jenkins & Messinger, 1966) report 52% of the sample population in the Western Collaborative Group Study was reported to manifest the Type A behavior pattern; Howard, Cunningham and Rechnitzer (1976) reported a range of 50-76%

among a managerial population; and Glass (1977) postulated the pattern to be normally distributed.

Empirical studies (Rosenman et al., 1964; Rosenman, Brand, Jenkins, Friedman, Straus & Wurm, 1975) were initiated in the Western Collaborative Group Study (WCGS). This was a prospective epidemiological study of 3154 males between the ages of 39 and 59 years who were employed in industrial California and who were free of CHD at intake. The WCGS is not a study of a total or a homogeneous population: 88.3% of the sample were in the top (5.6%) and second (82.7%) levels of occupational responsibility. The remaining 11.7% were laborers with no administrative responsibility (Rosenman et al., 1964). The study was designed to assess the contribution of the coronary-prone behavior pattern to the future incidence of CHD as independent from the classic risk factors discussed above.

In the 8 1/2-year follow-up Rosenman et al. (1975) reported that after statistical adjustment for other risk factors, Type A individuals in the age decades 39-49 and 50-59 years were found to be 1.87 and 1.98 times as prone to the onset of clinical CHD respectively. Earlier they had reported Type A individuals to be five times more prone to a recurrent MI and to have had fatal MI twice as frequently (Rosenman & Friedman, 1971a; 1971b).

Of particular relevance to this investigation is the finding that the Type A behavior pattern is strongly related to CHD and exerts an independent pathogenic influence when traditional risk factors are statistically adjusted (Rosenman et al., 1975). Multivariate analysis indicated that the Type A behavior pattern was

not the artifact of its association with other risk factors in the prevalence and incidence of MI.

Because of the clinical and epidemiological interest in the Type A behavior pattern and the cost-benefit limitations of the interview method of screening, Jenkins (Jenkins, Rosenman & Zyzanski, 1972) developed a self-administered computer-scored questionnaire — the Jenkins Activity Survey for Health Prediction (JAS). The JAS has been found to validly identify the behavior pattern in 72% of the original validation sample of 2800 males using the interview as the criterion. Further issues of reliability and validity will be taken up in the method section of this paper.

Data from the Jenkins Activity Survey have been subjected to factor analytic studies. Three factors are believed to contribute to the Type A behavior pattern: speed and impatience, hard-driving (competitive and responsible) and job involvement. In the criterion sample of 2800 males the hard-driving factor was identified as the most important single component, partially independent of the measure of behavior type (Jenkins, Zyzanski & Rosenman, 1971).

Although the association of the Type A behavior pattern with clinical CHD has become primarily identified with this one team of investigators, data obtained by other investigators have lent support to the existence of such an association. The statistical analyses of Cassel (1966) on the studies of Keith, Lown & Stare (1965) showed a positive association between CHD and the Type A behavior pattern. Quinlan (Wuinlan, Barrow, Hayes, Moinuddin & Goodloe, 1969) and Caffrey (1968) have reported data on Trappist and Benedictine monks

which have provided further support for this association. Caffrey (1968) reported monks judged to be Type A to have 4.3 times the prevalence of MI as compared to monks judged to be Type B by the standardized interview criteria.

Intense involvement in job or profession — the "success ethic of Western culture" (VanderValk & Groen, 1967) — has been implicated as a contributing factor in CHD by a number of research teams (Bruhn, McCrady & duPlessis, 1968; Russek, 1967; Sales, 1969; Wynn, 1967). Liljefors and Rahe (1970) in twin studies discordant for CHD found twins with MI less able to relax away from work and manifesting greater devotion to work. House (1975) implicates "work overload" as a risk factor.

Just as pertinent are the findings of Howard et al. (1976) who conducted a three-year longitudinal study on management stress on 236 managers of 12 Canadian companies. The prevalence of the Type A behavior pattern was found to be higher in managers of those companies which had experienced recent growth. The highest percentage of extreme Type A's (A_1's) was found in males age 36-54 years — the critical years for many issues of job and career. This finding suggests that a more demanding job environment would exert influence on moving Type A_2's toward the extreme Type A_1 pattern. Rosenman, Friedman, Straus, Jenkins, Zyzanski & Wurm (1970) reported higher rates of CHD in the age group 39-49 years among A_2's. It has been hypothesized that such a shift has occurred in the last decade as a result of increased environmental stressors which characterize highly industrialized societies.

Smaller retrospective studies have established that women who have CHD are more likely to exhibit Type A behavior (Friedman & Rosenman, 1959; Kenigsberg, Zyzanski, Jenkins, Wardwell & Licciardello, 1974; Rosenman & Friedman, 1961). The data presented by the Rosenman group document that Type B men had the same low prevalence of clinical CHD as did Type B women. This finding has led Waldron (1976) to implicate the coronary-prone behavior pattern as a major contributing factor to elevated mortality in males insofar as more men develop the Type A behavior pattern in response to socioeconomic pressures.

Failure to confirm the Type A behavior pattern as a predictor of MI has been reported in the Kaiser-Permanente Study (Friedman, Ury, Klatsky & Siegelaub, 1974) and by Mulcahy, Hickey and Mauer (1969). In both cases the instruments used were not the standardized interview developed by Rosenman and Friedman nor the JAS. The robust nature of the coronary-prone behavior pattern Type A has been demonstrated by the cross-validation on hospitalized patients in Connecticut using the JAS (Kenigsberg et al., 1974) as well as interview studies in Boston, in monasteries throughout the United States and Canada, and in twelve major companies in Ontario, Canada (Caffrey, 1968; Howard et al., 1976; Keith et al., 1965; Quinlan et al., 1969). These investigations have yielded data which have contributed to the construct validity of the hypothesis.

Although the causal role of social and psychological pressures in the pathogenesis of CHD has yet to be demonstrated empirically, several authors have published discussions of the possible pathogenetic dynamics of the Type A behavior pattern (Friedman, 1969; Rosenman &

Friedman, 1971b; Russek, 1967).

Illness and Illness Behavior

Many difficulties in understanding stress processes in illness evolve from confusion about the relationship between illness and illness behavior. The term "illness behavior" is used to describe how an individual or group of individuals defines and responds to symptoms of disease. A number of investigators have emphasized the need to distinguish between correlating stress with illness itself and correlating varied responses to the symptoms of illness, especially as they relate to help-seeking behaviors (Greenley & Mechanic, 1976; Hinkle, Redmont & Plummer, 1960; Mechanic, 1976a, 1976b; Waldron & Johnston, 1976; White, Williams & Greenberg, 1961). Jourard (1971a) argued that women are more sensitive to their "all is not well" signals whereas men "tune them out" until they are too strong to ignore. Empirical studies have documented sex differences in help-seeking (Hinkle et al., 1960; U.S. Dept. of HEW, 1973). Women have been found to perceive and report more symptoms, to visit the physician more frequently as a consequence, more often to reduce activity because of not feeling well, and to make greater use of preventive services.

Several explanations have been proposed to explain these behavioral differences. Men may ignore minor somatic illnesses or may underestimate the import of illness more than women (Hinkle et al., 1960; Sowder, Bond, Williams & Flemming, 1966; Waldron & Johnston, 1976). Women may be more dependent and affiliative, thus more ready to seek interpersonal solutions to feelings of distress

(Jourard, 1971a; Mechanic, 1976b). Men may be more stoic and self-reliant (U.S. Dept. of Labor, 1972; Wolff, 1968) or, as the traditional wage earners, more attached to work and fearful of lost income (U.S. Dept. of Labor, 1972).

Improved experimental methods have enhanced understanding of the behavioral and psychophysiological responses of an organism to environmental events with regard to adaptation and illness, Jourard's (1971a) of the "lethal male role" has thus enlisted empirical support. It seems that role conformity in some social systems — especially industralized societies — does, in fact, contribute to illness of gradual onset (for example, chronic degenerative changes in blood vessels which precede CHD). Indeed, choice of occupation and social position may influence the type of illness to which one is subject (Jourard, 1971a; Levi, 1971; Syme, Hyman & Enterline, 1964), and whether one seeks help in times of crisis.

For example, using the Cesarek-Marke Personality Schedule (which measured need for independence), one study in Sweden showed that untreated, newly diagnosed male hypertensives had a greater need for autonomy than did treated hypertensives (Berglund, Ander, Lindstrom & Tibblin, 1975). Untreated hypertensives tended to report fewer symptoms than treated hypertensives. The authors postulated that these differences may explain, in part, why the untreated hypertensives had not come under treatment for their hypertension. An alternative explanation was offered by them as well: that those untreated hypertensives had experienced sufficient organ damage to preclude many symptoms which otherwise would have

motivated assistance-seeking. The latter explanation, however, does not fully account for the reluctance to seek medical advice early, before organ damage may have minimized the experience of symptomatic disease.

When compared with untreated hypertensives without organ manifestation, untreated hypertensives with organ damage had significantly higher values on the Achievement scale which measured need to be successful and competent. Insofar as hypertension is considered to be a risk factor in CHD, these findings are relevant to the topic at hand and consistent with data obtained in studies of individuals with CHD (Jenkins, 1971; Rosenman et al., 1974; Wolff, 1968). It should be noted, however, that no published studies directly associate hypertension to Type A behavior (Glass, 1977). At present the data are mixed about this relationship in men (Rosenman et al., 1966; Shekelle, Schoenberger & Stamler, 1976).

The emphasis on autonomy is highlighted by Wolff's description of his patients, which he denoted as the "Sisyphus phenomenon":

> Like Sisyphus, they appeared to be continually carrying a burden and never quite getting to the top of the hill or the resting place. Moreover, the occurrence of coronary attacks appeared to correlate with periods when the individuals were carrying an especially heavy emotional load with relatively little support from those about them (1968, p. 86).

Bruhn, McCrady and duPlessis (1968) reported similar findings. Their MI patients seemed to lack supportive social relations and to feel misunderstood by persons close to them. In contrast, Matsumoto (1970) suggested that cultural institutions in Japan which provide social support and free expression of emotions might contribute to

the markedly lower mortality of Japanese-born men compared with Americans of Japanese heritage. One strategy used by people who seem to cope successfully with stress is to develop a network of friends or professional colleagues whose judgments they trust and whom they can count on to help in times of trouble. Under certain stressful circumstances, an increase in affiliative behavior is a common coping response (Lazarus, Averill & Opton, 1974). Those who manifest Type A behavior are often so dedicated to their vocations that they neglect recreation and family relationships (Rowland & Sokol, 1977). As one respondent in this study remarked, "My family is my hobby," meaning that he spent very little time with them.

Lynch (1977) provides a penetrating and comprehensive review of anecodotal and empirical evidence which documents the impact of chronic loneliness and social isolation. Lack of human companionship is one of the leading causes of premature death in the United States. The critical element influencing well being, Lynch says, is the ability to maintain human relationships. Support for this hypothesis is provided by Engel (1968), Moriwaki (1973) and Schmale (1958). Such empirical investigations suggest that Jourard's observations are indeed insightful and accurate. Furthermore, they suggest that low self-disclosure may be one aspect of a coping strategy manifested by individuals with Type A behavior.

A striking paradox is that sex differences in help-seeking behavior do not generalize to all sources of assistance. Pertinent to this investigation is the finding that women delay as long as men in seeking medical attention after the first symptoms of MI (Hackett

& Cassem, 1969; Moss, Wynar & Goldstein, 1969; Simon, Feinleib & Thompson, 1972). If this finding is corroborated in subsequent investigations, it adds further confirmation to the hypothesis that behavior patterns, not sex differences per se, contribute to high mortality rates in CHD.

Often, untoward delay influences whether an individual will or will not become a victim of sudden death. At least four retrospective studies on delay in help-seeking have reported former CHD patients to delay longer than any other group (Goldstein, Moss & Greene, 1972; Kuller, Cooper & Perper, 1972; Moss, Wynar & Goldstein, 1969; Simon, Feinleib & Thompson, 1972). Delay centered around decision to consult a physician. Simon, Feinleib and Thompson (1972) found prolonged hospital arrival time to be correlated with extraneous behavior not directly related to relief seeking. The ill patient persisted in attempts to satisfy role obligations disregarding the new limitations imposed by the onset of illness. Most sudden death from MI is arrhythmic in nature and frequently preventable with early intervention. Inaccurate appraisal of threat, mediated by other factors, may contribute to delay and to sudden demise.

Coping Behavior: Lazarus' Model

As was stated in the introduction, threat appraisal represents one component of coping behavior. "Coping" refers to those activities which serve to mitigate or eliminate stress. A full description of the theoretical views of coping processes and adaptation is beyond the scope of this paper but has been reviewed

elsewhere (Coelho, Hamburg & Adams, 1974; White, 1974). The present study is based on the theoretical model proposed by R. S. Lazarus (1966, 1975). According to his model, the coping process is based on "cognitive activity involving appraisal of the conditions of threat and the consequences of the coping behavior" (1966, p. 28). A constant interplay exists between threat appraisal, coping and physiological responses. To this extent, psychological coping processes (cognitive functions) involve physiological responses which may in turn serve as "noxious stimuli."

Lazarus (1966) identified two general classes of coping: direct-action tendencies and defensive reappraisals, commonly referred to as "defense mechanisms" (signaling response to danger or attack, but without the weighty meaning that the term carries in psychoanalytic theory).

Direct-action tendencies are aimed at "eliminating or mitigating the anticipated harmful confrontation that defines the threat" (Lazarus, 1966, p. 258). They may be expressed in "fight or flight." Direct-action tendencies which are expressed in motor behavior aim at strengthening resources against harm. Annual physical examinations and vigilance — such as timing length of anginal pain — are good examples of direct-action tendencies expressed in motor behavior.

"Attack" represents a second method by which direct-action tendencies find behavioral expression. "Any action-tendency which is aimed at preventing the anticipated harmful confrontation by means of an assault on the agent of harm may be termed attack" (Lazarus, 1966, p. 261).

A distinction is made between action tendency and expression in behavior. Action tendencies can be directly expressed in motor behavior or inhibited because they engender additional threats. For example, a male may wish to self-disclose more, but inhibit this tendency because of social conventions which discourage this behavior in males. These action-tendencies that do not find behavioral expression include "avoidance" and "inaction."

Direct-action tendencies which are aimed at preventing contact with an agent of harm are designated "avoidance." Avoidant activity is distinguished from passive acceptance and considered to be a powerful coping strategy which provides distraction or diversion (Gal & Lazarus, 1975). Several experimental studies have been reported which have measured vigilance/non-vigilance during the anticipation of electric shock (Averill & Rosenn, 1972; Gal & Lazarus, 1975). Monat (1976) found that temporal uncertainty about the onset of shock and longer anticipation time led to increased use of avoidant behavior, decreased vigilance and lower reactivity to stress as measured by heart rate, skin resistance, galvanic skin response and pre-post psychological questionnaires. These same investigators have studied psychophysiological reactivity to stress under avoidant and non-avoidant conditions. The findings are mixed.

In contrast, "inaction" is characterized by the absence of any action-tendency in the face of threat. Conviction that there is no direct way of preventing harm (resignaion or passive acceptance) must prevail for inaction to occur (cf. Seligman's learned helplessness model which postulates noncontingency between response and

outcome, 1975).

The central idea of "defensive reappraisal" is that threat is appraised cognitively. A defense represents a distortion of reality which alters the appraisal, but not the prospect, of actual harm. Thus, defensive reappraisal consists of "purely cognitive maneuvers through which appraisal is altered without action directed at changing the objective situation" (Lazarus, 1966, p. 259). Lazarus (1975) has since used the more global and less loaded term "palliative mode" to refer to cognitive maneuvers the goal of which is to relieve the emotional impact of stress without altering the threatening experience.

The success of defense is measured by the absence of stress reactions. For example, successful denial during the early stages of recovery from an acute MI may ameliorate psychophysiological stress reactions and reduce the likelihood that lethal arrhythmias will develop. Hackett and Cassem (1970) reported in a study of 50 patients in a coronary care unit that 20 out of 50 were "major deniers." These patients stated unquivocally and unremittingly that they experienced no anxiety as a result of their illness nor during cardiac monitoring during the acute phase of their illness.

Success, however, does not define the adaptive value of defensive reappraisal. Successful defense can be maladaptive by deploying attention, decreasing vigilance and effecting a false sense of security. Janis' (1958) research with surgical patients highlights the distinction between successful yet maladaptive use of defense as a coping strategy. Those patients who showed the least

preoperative fear were least cooperative with the post-operative treatment regimen.

Successful denial at the onset of chest pain contributes to a delayed decision to seek medical attention. Prolonged denial can lead to a lack of compliance with medical advice as documented by Croog, Shapiro and Levine (1971). Denial appeared in such findings as denial of CHD in friends and relatives, minimizing symptoms, minimizing effects of the MI on one's life-style in general and on work, specifically. The team of investigators found a tendency for the denier to resist medical advice relative to smoking, rest and work. Denial persisted for up to one year post-MI, increasing the probability of recurrent MI. These are instances in which successful defense is maladaptive because they appear to have "prevented the processes that would have led to realistic expectations and to the tolerance of inevitable later events" (Lazarus, 1966, p. 293).

Prolonged stress exerts detrimental influences not only on illness-proneness, but on coping reactions as well. Shanan, Kaplan De-Nour and Garty (1976) reported findings that prolonged stress reduced the tendency to cope actively in individuals experiencing terminal renal failure. Lowered tendency to actively cope was viewed as related to an increase in dependency, which the investigators related to a shift from internal to external locus of control. Berglund et al. (1975) reported similar findings.

In summary, Lazarus (1966) has identified two major types of coping reactions — direct-action tendencies and defensive reappraisal. As distinguished from direct coping, defensive

reappraisal occurs when (1) no direct coping seems viable or when (2) the agent or source of harm cannot be located.

Control — or perception of control — may be a most important factor in the choice of a coping strategy. In an analog study of coronary-prone behavior, stress levels and learned helplessness, college students manifesting Type A behavior reported more subjectively rated helplessness at high intensity of uncontrollable stress than with moderate stress. Those with Type B behavior reported the obverse. This finding, if replicated with a working population, suggests the tendency for Type A individuals to reassert efforts to control is mediated by level of stress and threat of helplessness (Krantz, Glass & Snyder, 1974).

When social norms favor or produce pressure toward a particular mode of coping, they increase the likelihood of such forms of coping (Lazarus, 1966). This idea is consonant with Jourard's (1971) view of the male role: that it encourages independent coping rather than interpersonal solutions. Jourard proposed the hypothesis that older males are invited by society to "stop living" and frequently oblige — if not by actually commiting suicide, then by symbolically commiting the act by relinquishing their traditional ways of coping. Jourard (1971a) writes:

> . . . he may commit suicide more slowly by stopping his projects . . . [or] by suspending his vigilance toward all the things that are always present to kill a person, but which ordinarily he averts or neutralizes when he experiences his existence as having value, when he has things to do, projects to fulfill (p. 94).

Factors of self-identity and self-esteem seem to be predicated on a narrower base for men. Whereas the stereotypic male role is often defined by gainful employment, sexual potency and social status, the role of the female seems to favor a broader behavioral repertoire and more alternatives for interpersonal coping. Hence, with advancing age, men in Western culture may be forced back to an even narrower base of coping strategies. It may be that for some individuals the Type A behavior pattern represents the only alternative to an unacceptable mode of coping characterized by denial and helplessness.

Self-Disclosure as a Coping Strategy

There is an extensive literature on self-disclosure which refers both to a process that occurs during interaction with others and to a personality construct. Research in personality correlates of self-disclosure has been conducted in sundry areas including child-rearing practices, family interaction patterns, ethnic, sexual, racial, religious, social and cross-cultural factors as reviewed by Cozby (1973) and Jourard (1971a, 1971b).

Self-disclosure in interpersonal relationships has been analyzed by looking at self-descriptive essays (Burhenne & Mirels, 1970), at reciprocity (Argyle & Kendon, 1967; Levin & Gergen, 1969; cf. Murdoch, Chenowith & Rissman, 1973), at varying levels of intimacy (Jourard, 1971b), over time (Taylor, Altman & Sorrentino, 1969), and at target persons (Jourard, 1971b; Jourard & Lasakow, 1958; Pederson & Higbee, 1969). Self-disclosure and liking has been studied (Cozby, 1972; Worthy, Gary & Kahn, 1969) as has self-disclosure and marital

satisfaction (Katz, Goldston, Cohen & Strucker, 1963; Levinger & Senn, 1967; Shapiro & Swenson, 1969). A recent, complete review of this literature has been published by Cozby (1973).

As in many similar areas of research, methodological problems and inconsistencies abound. Self-disclosure research has been complicated by studies which reflect dissimilarity in content and levels of intimacy, different target persons (e.g., stranger, acquaintance, best friend, spouse) and types of situations in which one discloses. A poverty of operationally defined behavioral measures prevails. Other problems include inconsistent definition of self-disclosure and selection bias by use of volunteer subjects (Adler, 1973; Cozby, 1973; Hood & Back, 1971; Pederson & Higbee, 1968; Vondracek, 1969a, 1969b).

If one had direct access to his/her inner experiences, Jourard (1971a) argues, one would have earlier signals that the present mode of responding is costly in form of illness. Since one does not, disclosing to another may facilitate examination of, and reaction to, an adaptive mode of behavior which is generating illness such that changes may be instituted early.

A somewhat contrary hypothesis is proposed by Moriwaki (1973) who examined self-disclosure, social supports and psychological well-being in the aged. Her data indicate that regardless of level of self-disclosure, the number of significant others (persons close to an individual) is directly related to psychological well-being.

It is sufficient here to point out that self-disclosure may be a basic essential component of different coping strategies and, thus, worthy of study from this perspective. At the very least, self-disclosure in CHD patients is of critical practical importance relative to illness behavior perspective and especially to compliance with medical advice.

General Methodological Issues

Research in this area is complex, fraught with methodological problems the likes of which often direct the psychological researcher into less meaningful, but methodologically "less messy" research areas. Foremost is the problem of terminology. Often, terms such as "stress," "defense," "denial," "coping," and "self-disclosure" are used by investigators in ambiguous ways which are not operationally defined. Even with operational definition, terminology is often not behaviorally anchored.

A partial explanation of this semantic confusion derives from dualistic thought and the mind-body problem — the legacy of psychology and allopathic medicine. Phenomena which are identified as "psychological" are frequently written off as somehow unreal. Since the brain is an integral part of the human organism, these distinctions are better left to philosophers. Scientists might better address the stimulus question: Which responses of an organism — especially illness as response — are responses to a given stimuli? (Graham, 1972). The concept of stimulus-response interactions is an important one. It may be, for example, that cigarette smoking is a risk factor (stimulus) for CHD, but that some pre-illness behavior

serving as the stimulus for smoking is more the subject for analysis.

The use of self-report as data is yet another methodological issue. Whether to include an individual's perceptions of self or others as a reliable source of data or whether to limit investigation wholly to those variables that can be directly measured is a dilemma most aptly discussed by Mechanic (1976a). In the present study, self-report is viewed as the primary source of data despite its limitations — recency effects, social desirability and demand characteristics.

Finally, we need briefly to consider the limitations of prospective and retrospective approaches to the study of CHD. Too often, researchers assume that the findings of retrospective studies generalize to prospective studies. Invalid conclusions result from this type of reasoning. Aside from the obvious concerns with the time and expense of prosepctive research, there are several other issues which demand attention. People who volunteer and continue to participate in longitudinal studies may or may not represent an adequate sampling of an at-risk population. Persons with Type A behavior patterns may be less inclined to volunteer, and having volunteered, less inclined to comply with all the requirements of such a study. Prospective studies are further complicated by the 20-50 year latency period which elapses before pervailing risk factors exert detectable effects. The prospective Framingham study, discussed by Lynch (1977), is one example of these limitations. In spite of these issues, when a prospective design is employed, original responses are not contaminated by knowledge of outcome, by mortality rates or by

information unavilable due to memory loss.

Retrospective approaches are less costly in terms of time and ease of administration; the sample population is easier to define and enlist. But insofar as these studies tap only that portion of the population that survives overt manifestations of CHD, especially MI, data on victims must be obtained through secondhand sources such as medical records and reports from significant others. Responses of persons with extant CHD may be reactive to the disease or to its treatment. Moreover, as Lebovits et al. (1967) point out, victims of CHD may differ from survivors on variables being investigated.

If we accept the assumptions that behavior is in part a result of environmental influences and that an interaction exists between varying levels of stress, cognitive appraisal and coping behavior, then these issues must also be considered in interpreting the results of either prospective or retrospective data. People aren't static; changes do occur over time as a function, for example, of dissonance reduction or of learning experiences. It should be remembered, however, as Theorell (1974) cautions, "that the reports of subjects who do not know that they are going to develop an MI in the near future are not necessarily 'more true' than the retrospective analysis of the situation afterward" (p. 115).

Statement of the Problem

This is a long introduction to the main task of this paper, but it will not have been wasted if we start that task with a clear realization of these points:

1. An overt pattern designated as "Type A behavior" has been found to presage clinically manifested CHD. As currently conceptualized, this behavior pattern results from the interaction between a predisposed individual and specific environmental pressures.
2. Approaches directed toward definition of combinations of social and demographic variables which increase risk of CHD are more fruitful than those which direct attention to single social-status variables.
3. Retrospective studies have repeatedly shown that environmental stress and life dissatisfactions are more prevalent in individuals with clinical manifestations of CHD.
4. Anxiety and neuroticism appear to precede as well as follow overt CHD, especially angina pectoris, with greater frequency than one finds in healthy controls. Further evidence has been generated which suggests that myocardial infarction and angina pectoris may be distinctive pathological states (Caffrey, 1967).
5. That denial and repression are used excessively by coronary-prone individuals has been widely reported.
6. Coping strategies may ameliorate or promote stress reactions. Adaptive coping is not understandable

without reference to the significance of the threat and to the coping activity engaged in by the individual.

7. Social isolation and low self-disclosure may predispose to illness and/or early death.
8. Adaptive coping strategies such as help-seeking and relinquishing control to others may be deemed unacceptable by individual manifesting Type A behavior.

The variables under study include presence or absence of myocardial infarction, Type A and Type B behavior patterns, selected coping strategies and self-disclosure. The hypotheses under study are as follows:

1. On a measure of Type A behavior, coronary subjects are expected to have a significantly higher mean score than non-coronary subjects.
2. There will be a significant association between a measure of Type A behavior and self-disclosure.[1]
3. There will be a significant positive association between active, interpersonal coping and self-disclosure.
4. There will be a significant negative association between defensive coping and self-disclosure.

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[1] At the time this hypothesis was proposed, the literature did not clearly suggest directionality as it does today.

5. There will be a significant association between a measure of Type A behavior and a measure of active-defensive coping.[2]

[2]At the time this hypothesis was proposed, the literature did not clearly suggest directionality as it does today.

Method

Subjects

Participation in the study was restricted to Caucasean married males between the ages of 30 and 59. Individuals who were retired from work or who were not fluent in English were excluded from the sample. There were four comparison groups in the sample of 72 males: 10 post-myocardial infarction out-patients; 23 in-patients with acute myocardial infarction; 15 in-patients who subsequently were found not to have myocardial infarction; and 24 in-patients who underwent surgery for traumatic orthopedic injuries. In-patients entered the Edward W. Sparrow Hospital in Lansing, Michigan, between September, 1977 and December 1978. Patients with chest pain but no myocardial infarction experience the same treatment during the first three days of hospitalization as do patients with infarction. The rationale for using this group as well as the orthopedic group was that they experience a sudden admission to the hospital that approximates the admission experience of the myocardial infarction patient. This represents an attempt to control for effects of hospitalization and uncertain prognosis. The out-patient group was included to evaluate whether differences exist as a result of either or both time since the myocardial infarction and effects of hospitalization. The present study, however, was not designed to assess which of these differences, if any, were present.

Twenty-three of the thirty-eight persons admitted with chest pain received a final diagnosis of myocardial infarction (MI). In this sample, diagnosis of complete transmural myocardial infarction was established when at least two of three diagnostic criteria were met: clinical presentation and history consistent with MI, diagnostic QRS changes in serial electrocardiograms, and elevated serum enzymes (creatinine phosphokinase, glutamic oxalacetic transaminase, and lactic dehydrogenase) consistent with myocardial injury. In the MI group two patients had a history of one previous MI; two patients suffered cardiac arrest upon admission and survived resuscitation with no neurological damage; one patient developed complete heart block which required insertion of a demand pacemaker upon admission; one patient developed pericarditis post-MI; and one patient was undergoing evaluation for a possible ventricular aneurysm.

Final diagnoses for those individuals admitted with chest pain and subsequently found not to have MI included the following (the numbers in parentheses in this paragraph and the next indicate the number of patients in each group): MI ruled out (8); paroxysmal atrial tachycardia (1); cholecystitis (1); impending MI (1); acute pericarditis (1); probable angina, unstable (1); costochondritis (1); and Chrone's disease of the colon (1).

Admitting diagnoses for the traumatic injury group included: fractured ankle (1), femur (1), radial head (1), and compound fracture of the foot (1); multiple fractures and pneumothorax (2); multiple injuries, fractured clavicle, bilateral fibial plateaux fractures (1); torn lateral and medial meniscus of the knee (9); internal

derangement of the knee (1); cellulitis with abscess of lower extremities following traumatic injury (2); herniated lumbar disc with fusion (1); herniated nucleus pulposus (3); and acromioclavicular joint separation (1). This group did not have a history of cardiovascular disease or current cardiac symptoms.

The ten out-patients were referred by a local cardiologist and were currently under treatment. They had experienced one MI event within the last five to seven years.

The descriptive characteristics of the subjects are presented in Table 1 which includes both raw scores and percentages in each of the comparison groups. It is immediately apparent that the mean age for each comparison group differs from the mean age of the MI sample. The extreme ages (30 and 59 years) are represented in all three of the in-hospital groups. One way analysis of variance does not achieve statistical significance when the in-hospital groups are compared with each other on age nor when the MI, post-MI, and MI ruled-out groups are compared. One way analysis of variance indicates that a significant difference exists when the groups are compared on social position as measured by the Two-Factor Index of Social Position (Hollingshead, Note 1), $F\ (3, 68) = 3.75$, $p < .05$. Thus, these data do not permit the conclusion that the groups are clearly equivalent in terms of basic socioeconomic variables. Notwithstanding, the differences are less than commonly found given the inherent problems in obtaining these kinds of subjects (cf. Glass, 1977). The author does not believe these differences seriously bias the comparisons needed to test the hypotheses outlined earlier.

TABLE 1. Number and Percentage of Subjects in Each Sample.[a]

Characteristics	Post-MI Patients n = 10	MI Patients n = 23	MI Ruled Out Patients n = 15	Orthopedic Patients n = 24
Age				
30-39	0 (0)	4 (17)	4 (27)	9 (38)
40-49	2 (20)	10 (43)	6 (40)	10 (42)
50-59	8 (80)	9 (39)	5 (33)	5 (21)
M:	53.30	48.52	45.60	41.87
SD:	4.60	8.04	8.34	8.08
Religion				
Protestant	7 (70)	12 (52)	12 (80)	13 (54)
Catholic	1 (10)	3 (13)	2 (13)	6 (25)
Jewish	0 (0)	1 (4)	0 (0)	0 (0)
None	2 (20)	7 (30)	1 (7)	5 (21)
Hollingshead Index of Social Position				
I	1 (10)	6 (26)	2 (13)	0 (0)
II	5 (50)	4 (17)	2 (13)	4 (17)
III	3 (30)	4 (17)	3 (20)	3 (13)
IV	1 (10)	6 (26)	6 (40)	12 (50)
V	0 (0)	3 (13)	2 (13)	5 (21)
M:	29.80	40.67	33.87	47.50
SD:	11.64	18.37	18.79	15.85

[a]Numbers outside parentheses indicate the number of subjects in each group. Numbers in parentheses indicate percentages of each of the comparison groups.

Instruments

The instruments used in the study permitted each subject to respond in both a forced-choice and in a narrative format. Three questionnaires were given to all subjects: the revised student version of the Jenkins Activity Survey for Health Prediction, the Personal Dilemmas Questionnaire, and the Jourard Self-Disclosure Questionnaire.

The Revised Jenkins Activity Survey (JAS). The original validation sample for the adult JAS was approximately 2800 men in the Western Collaborative Group Study (Jenkins, Rosenman & Friedman, 1967; Zyzanski & Jenkins, 1970). The self-administered questionnaire validly indentified the behavior pattern in 73% (an overall agreement rate) of the sample, using the standardized diagnostic interview developed by Rosenman et al. (1966) as the criterion. The JAS agreed with the interview in 68% of men classified Type A and in 78% of men classified Type B (Jenkins, Zyzanski & Rosenman, 1971). These data suggest that the JAS is more valid in identifying the Type B behavior pattern; thus it may be expected that the JAS should misclassify more A's than B's. These percentages may represent the lower boundary of agreement because the interview and the JAS were administered two years apart (Jenkins et al., 1967).

Extreme scores agree 90% of the time with the criterion. The JAS does not assess non-verbal behaviors which are considered to be a part of the scoring criteria in the standardized interview. It must rely on self-report and content exclusively. This limitation may also account for the lower validity in the JAS. Predictive validity

has yet to be shown although prospective studies by Jenkins and his co-workers are presently underway. The ultimate criterion by which to evaluate the JAS is the occurrence of clinical CHD; the standardized interview does not attain perfect validity nor perfect inter-rater reliability.

At the time the data for this study were collected, the adult version of the JAS was available to only a limited number of investigators associated with Jenkins. Permission was obtained from David C. Glass to use the student version of the JAS. Since items referring to income, job involvement and job responsibility in the adult version of the JAS were either eliminated or revised for the student version of the questionnaire, it was necessary to modify those revisions. A discussion of the modifications and scoring is contained in Appendix A. Suffice it to note here that the A-B scale of the modified student version of the JAS (henceforth called the "Revised JAS") is virtually identical to the Form E of the adult JAS (Jenkins et al., 1972).

The Personal Dilemmas Questionnaire (PDQ). The PDQ was developed by Liebermann, Yalom and Miles (1973) for the study of coping styles. It measures the tendencies to cope actively and interpersonally and to cope defensively (by denial, escape or minimizing) with the demands of a situation. Lazarus (1966, 1975) has not developed a self-report measure of coping-reaction; however, the PDQ seems relatively consistent with his model. For example, "Try to see the humorous aspects of the situation," an item on the PDQ, when examined from Lazarus' perspective could fit the criterion of "defensive

reappraisal." Insofar as this questionnaire has been used in only two studies to date (personal communication with Liebermann & Bond, 1977) the reliability and validity have not been firmly established.

Part I of the PDQ contains open-ended questions. These were adapted to an interview format with the addition of standardized prompts for each dilemma and subjected to content analysis without difficulty. Scoring criteria are provided in Appendix A.

The Jourard Self-Disclosure Questionnaire (JSDQ). Pederson and Higbee (1968) obtained evidence of convergent and discriminant validity of the 25-item and 60-item JSDQ by the multitrait-multimethod matrix developed by Campbell and Fiske (1959). The JSDQ appears to be independent of intelligence which provides further evidence of discriminant validity (Halverson & Shore, 1969; Jourard, 1971b). It has been demonstrated by Jourard (1971a) that questionnaires of this type have odd-even reliability coefficients in the .80's and .90's. The consistency of findings reported in various studies contributes to the construct validity of the Jourard scales or variants of them (Cronbach & Meehl, 1956).

It is clear that the JSDQ does not accurately predict actual self-disclosure in experimental settings and, thus, there is little evidence for predictive validity. Researchers have been unable to find a positive relationship between the JSDQ and actual disclosure in ratings of actual self-disclosure in group situations by peers (Himelstein & Lubin, 1965; Hurley & Hurley, 1969), in self-descriptions (Burhenne & Mirels, 1970; Pederson & Breglio, 1968), or in a dyadic situation (Ehrlich & Graeven, 1971; Vondracek, 1969a, 1969b).

But, relatively few studies have employed behavioral measures — that is, disclosure of information to other subjects or to an experimenter (Adler, 1973; Allen, 1973; Vondracek, 1969a, 1969b). Whereas scores on the JSDQ reflect a subject's past history of disclosure to significant others in a dyadic relationship (parents, spouse, best same-sex friend, best other-sex friend), actual disclosure has previously been measured when the subject has been disclosing to a stranger or in a "public" group setting such as encounter group. These factors may explain the lack of predictive validity.

More recently, Jourard developed a 40-item "future-oriented" questionnaire which requests subjects to indicate what they have disclosed to someone in the past, and what they would be willing to disclose to a stranger. Some evidence for predictive validity has been obtained using this instrument (Jourard & Resnick, 1970). When subjects were allocated to low- and high-disclosure groups and placed in a dyadic situation, this form of the questionnaire forecasted behavior in a differential way. It is this particular variant of the JSDQ which was administered in this study using two different formats. These are discussed further in Appendix A.

The Hollingshead Two Factor Index of Social Position. Demographic data were collected to determine the social position for each subject. Information about the highest grade of school completed, occupational title and type of industry were scored for educational and occupational status using the method developed by Hollingshead (Note 2). This method conceptualizes and indexes populations into categories which reflect the social position an individual in a status

structure of society. Occupation and formal education represent two symbolic characteristics of social status. Occupation is presumed to reflect the skill and power individuals possess while performing their functions in society whereas level of education is believed to reflect knowledge and cultural tastes.

Procedure

Each person in the sample was approached individually by the author and asked if he would participate in a program of research concerning how people deal with stress in their everyday lives. All potential subjects were verbally apprised of their rights as volunteer participants.

The out-patient group was contacted by telephone and asked if they would participate in the study. Subjects who agreed were sent a follow-up letter reviewing the purpose of the study and the source of referral. Consent forms, questions about demographic information and the study questionnaires were included with this cover letter. The subject was requested to return them by mail within one week.

In-patients who agreed to participate were left alone to complete the consent forms and the study questionnaires. In most cases the researcher returned in 24 hours to collect the completed questionnaires. Two specific procedures were employed. Initially all three study questionnaires and the demographic questionnaire were self-administered. However, it was difficult to obtain full questionnaire data on every subject. Thirty-four percent (N = 28) of the self-administered questionnaires were incomplete, often because

the subjects did not understand the use of the separate answer sheet for the JSDQ. Thus, for the remainder of the in-hospital subjects (N = 34) a second procedure was employed. Potential subjects were approached in a manner outlined above. However, they were informed that after completion of the questionnaires, the researcher would like to interview them. The JSDQ and the Revised JAS were self-administered. At the time the researcher returned to collect the completed forms, the subject was interviewed. The interview was tape-recorded and usually lasted 15-20 minutes. Some questions were asked concerning demongraphic information; then Part I of the PDQ was administered. Immediately following the interview, subjects were left alone to complete Part II of the PDQ. With this procedure, full questionnaire data was obtained from each subject.

There were some unique characteristics of the data collection environment for each of the in-hospital groups which are detailed below.

Those patients with myocardial infarction were seen in the cardiac care unit or the cardiac teaching unit 10-14 days post-MI. Thus, they were no longer undergoing cardiac monitoring. They were at an activity level which permitted extended chair rest, limited ambulation and involvement in the cardiac teaching program.

Patients in the orthopedic group were contacted one to three days post-operatively when they were considered to be in "good" condition by the hospital staff. On occasion, these patients were unable to use their dominant hands to write, so the researcher transcribed the answers for them.

Patients who subsequently had MI ruled out were seen three to four days after admission to the cardiac care unit. By that time cardiac monitoring had been discontinued and differential electrocardiograms and serum enzymes had refuted a diagnosis of MI. When seen by the researcher, these patients were either preparing for discharge from the hospital or transferred to another hospital ward.

Results

Some individuals declined to participate in the study because the task was too personal, too time-consuming, their wives "did not think it was a good idea," or they did not feel like answering the questions. The overall refusal rate was 19%. Early in the study an attempt was made to contact the wives of respondents to enlist their participation as well. They were very reluctant to do so and this effort was abandoned. Further reference to this is made in the discussion section.

In evaluating the results of the study, the 0.5 level of significance was used as the criterion for rejecting a null hypothesis. Two-sided directional "tests" (Allen, Note 3) were used throughout. Pearson product-moment correlation (r) was used to determine relationships between the variables under consideration. Since full questionnaire data were not obtained on every patient (see Procedure section), the N's vary for different measures. With these considerations in mind, let us turn to the first set of data, namely, the revised Jenkins Activity Survey scores.

The Revised Jenkins Activity Survey (R-JAS) Scores

The mean raw R-JAS score for the total sample was 9.35 (S. D. 3.84). The scores ranged between 0 and 17, where 0 represents the extreme Type B behavior pattern and 21 represents the extreme Type A behavior pattern. Subjects scoring above the mean were designated

Type A. Those scoring below the mean were designated Type B.

Table 2 shows the distribution of R-JAS scores in the sample.

TABLE 2. Distribution of the R-JAS Scores in the Sample.[a]

	Post MI n = 10	MI n = 23	MI Ruled Out n = 15	Orthopedic n = 24
R-JAS Score				
M	8.96	9.67	10.00	9.25
SD	4.59	3.46	4.22	3.27
Group n				
Type A	6	10	8	13
Type B	4	13	7	11

[a]A score of 0 represents the maximum Type B score; a score of 21 represents the maximum Type A score.

The mean R-JAS scores were virtually the same for all groups. A one-way analysis of variance revealed no significant differences between any of the comparison groups on Type A. These findings do not confirm initial predictions that coronary subjects would have higher mean scores on Type A than the other groups. Thus the data do not permit rejection of the null hypothesis.

The R-JAS score was positively correlated with social position ($r = +.272$, $p < .05$), with education ($r = +.255$, $p < .05$) and with occupation ($r = +.290$, $P < .02$) as measured by the Two Factor Index of Social Position. Although modest in magnitude, these coefficients indicated a consistent tendency in this sample for persons who respond with Type A behavior to have higher educational and

occupational status than those who respond in the Type B manner.

An inverse correlation between Type A and Type B behavior patterns and age (r = -.11) did not achieve statistical significance; a modest inverse association has been reported by other investigators (Mettlin, 1977; Shekelle, Schoenberger & Stamler, 1976; Zyzanski, 1978).

The Jourard Self-Disclosure Questionnaire (JSDQ) Scores

One-way analysis of variance was employed to evaluate differences in the two procedures utilized to obtain the self-disclosure data. No significant differences were revealed in sex of the target-person for predicted future self-disclosure nor between the two test formats. Likewise, no statistically significant relationship was found between age and past or predicted future disclosure.

To test the hypothesis that a relationship exists between Type A and Type B behavior patterns and self-disclosure, intercorrelations between Type A and Type B scores, past, and future self-disclosure scores were calculated. Table 3 reveals small, but significant relationships between each of these variables. Significant positive

TABLE 3. Product-Moment Correlations between R-JAS Scores, Social Position and Self-Disclosure

	Social Position[a]	Past-Disclosure	Future-Disclosure
R-JAS Score	.272* (n = 72)	.298** (n = 67)	.260* (n = 63)
Social Position		.245* (n = 67)	.353*** (n = 63)
Past-Disclosure			.565*** (n = 63)
Future-Disclosure			

Note. Full questionnaire data were not obtained on every subject; therefore the n varies for different measures.

[a] Scored by the method of Hollingshead.

* p < .05; ** p < .02; *** p < .01

correlations were found between past and future disclosure ($r = +.565$, $p < .01$), and between R-JAS scores and both past and future disclosure ($r = +.298$, $p < .02$; $r = +.260$, $p < .05$ respectively).

Since social position and Type A and Type B behavior were positively correlated with each other ($r = +.272$, $p < .05$), it was pertinent to determine what happened to past and future disclosure when social position and Type A behavior were statistically controlled. Accordingly, the correlations among pairs of variables were computed with the third variable partialled out. When social position was thus controlled, only the correlation between Type A scores and past disclosure remained significant ($r = +.272$, $p < .05$) whereas only the correlation between social position and future disclosure remained significant ($r = +.304$, $p < .02$) when Type A scores were partialled out.

Multiple correlation using two predictors (R-JAS Type A scores and social position) and one criterion variable (self-disclosure) was computed to give an indication of the degree to which the predictors, taken together, actually predicted self disclosure. By combining R-JAS Type A scores with social position scores, the multiple correlation with past disclosure was lowered to $r = +.28$ which indicates that R-JAS scores alone ($r = +.30$) predict past disclosure better than their joint correlation with social position.

However, the joint correlation of R-JAS scores and social position scores with future disclosure was raised to $r = +.37$, a slight increase above social position ($r = +.35$) as a sole predictor of the criterion variable. Thus, for future disclosure, the value of

the R-JAS Type A scores and social position taken jointly is a somewhat better predictor than either predictor taken separately.

Although the relationship between Type A behavior pattern and reported past self-disclosure was significant, it accounted for only 9% of the variance. Accordingly 9% of the variance is accounted for using R-JAS scores and only 8% using social position scores to explain the variance in future self-disclosure. Fourteen percent of the variance in future disclosure is accounted for using the combination of R-JAS and social position scores. These findings suggest the influence of other variables on both reported past and predicted future self-disclosure.

Correlations between reported past self-disclosure and predicted future disclosure were found to be higher for the Type A group ($r = +.69$, $p < .01$) than for the Type B group ($r = +.36$, $p < .05$). However, testing for the difference between independent correlations found this difference was not significant. Further, a discrepancy score was obtained by subtracting the predicted disclosure score from the reported past disclosure score given by each respondent. A one-way analysis of variance revealed no significant difference between the two groups although 17 subjects predicted higher future self-disclosure than past self-disclosure. The results confirm the prediction that Type A behavior and past disclosure are associated. The Type A patients are found to report significantly higher past disclosure than their Type B counterparts. No significant differences were found between the groups on future disclosure scores. Thus, there is insufficient evidence to support the hypothesis that Type A

behavior and predicted future self-disclosure scores are associated.

The Personal Dilemmas Questionnaire (PDQ) Scores

Some subjects reported three dilemmas while others reported less than three. Because the n varied for each dilemma and because of the varied range in using the scales, active and defensive coping scores were transformed to a defensive-active ratio for each subject. One-way analysis of variance showed no significant differences between the A and B groups for defensive:active coping (across the three dilemmas).

Each dilemma was then examined separately, using the raw scores. A series of one-way analyses of variance was conducted comparing the A and B groups on each of the 19 scaled items for each dilemma. The results are shown on Table 4, and are as follows:

1. On Dilema I, "Wanted to change something in your personal life," significant differences were found between the Type A and Type B groups on three items: (10) "Get your feelings out by talking to someone," $F(1.54) = 10.42$, $p < .005$; on (12) "Try to get some perspective by talking it over with a friend," $F(1,55) = 7.64$, $p < .01$; and on (14) "Express your feelings 'as they are' to the other person(s)," $F(1,55) = 13.54$, $p < .01$. In all cases, the Type A group rated themselves higher than did the Type B group on these particular behaviors.

2. On Dilemma II, "Had a problem with a close friend," a significant difference was found between the Type A and Type B groups on two strategies: (2) "Take some positive, concerted action on the

TABLE 4. Differences[a] between Type A and Type B Groups and Reported Coping Strategies on the Personal Dilemmas Questionnaire

	Behavior Pattern	n	M	S.D.	df	F	Significance Level of Difference[b]
Dilemma I							
Item Number							
10 Get feelings out to someone	A	30	5.43	1.79	1,54	10.42	$p < .005$
	B	25	3.64	2.33			
12 Talk with friend	A	31	4.68	2.06	1,55	7.64	$p < .01$
	B	25	3.12	2.15			
14 Express feelings 'as they are' to person(s)	A	31	5.32	1.81	1,55	13.54	$p < .001$
	B	25	3.36	2.18			
Dilemma II							
Item Number							
2 Take positive action	A	23	5.74	1.76	1,42	5.00	$p < .05$
	B	20	4.40	2.16			
14 Express feelings 'as they are' to person(s)	A	23	5.61	2.17	1,42	8.33	$p < .01$
	B	20	3.65	2.28			
Dilemma III							
Item Number							
14 Express feelings 'as they are' to person(s)	A	29	5.34	2.04	1,56	6.62	$p < .025$
	B	28	3.86	2.32			

Note. Complete data were not obtained on every subject; therefore the n varies for different scales.

[a]As measured by one-way analysis of variance.

[b]Type A group higher on each strategy.

basis of your present understanding of the situation," $F(1,42) = 5.00$, $p < .05$ and on (14) "Express your feelings 'as they are' to the other person(s)," $F(1,42) = 8.33$, $p < .01$. On both scales, the Type A group rated themselves higher than did the Type B group.

3. On Dilemma III, "Had a problem with work," one significant difference was found between the Type A and Type B groups on (14) "Express your feelings 'as they are' to the other person(s)," $F(1,56) = 6.62$, $p < .025$. Again the Type A group rated themselves higher than did the Type B group.

These findings suggest that although there are no significant differences between groups on the total scores for the PDQ, there are differences in selected behaviors in particular circumstances. This finding lends support to the idea that individuals use coping strategies selectively as they interact with environmental circumstances and weakens the notion of coping dispositions.

To test the hypotheses that coping strategies are associated with self-disclosure, correlations were calculated between coping scores and mean self-disclosure scores (past and future disclosure) for each individual. Table 5 shows the correlation matrices. In each of the three dilemmas, correlations between active and defensive coping scores were not significant. This finding suggests that the two subscales are independent of each other. A positive association between active coping and mean disclosure was significant over all three dilemmas ($r = +.295$, $p < .05$; $r = +.392$, $p < .02$;

TABLE 5. Product-Moment Correlations between Active and Defensive Coping, Social Position[a], and Mean Self-Disclosure

	Defensive Coping Score	Social Position	Mean Disclosure Score
Dilemma I			
Active Coping Score	.047 (n = 56)	.231 (n = 56)	.295* (n = 52)
Defensive Coping Score		-.191 (n = 56)	-.075 (n = 52)
Social Position			.357*** (n = 63)
Dilemma II			
Active Coping Score	.015 (n = 44)	.286 (n = 43)	.392** (n = 41)
Defensive Coping Score		-.032 (n = 43)	-.063 (n = 41)
Social Position			.357*** (n = 63)
Dilemma III			
Active Coping Score	.147 (n = 58)	.161 (n = 58)	.475**** (n = 54)
Defensive Coping Score		-.148 (n = 58)	-.138 (n = 54)
Social Position			.357*** (n = 63)

Note. Complete data were not obtained on every subject; therefore the n varies for different correlations.

[a]Scored by the method of Hollingshead.

*p < .05; **p < .02; ***p < .01; ****p < .001

and $r = +.295$, $p < .001$ respectively). Correlations between defensive coping and disclosure did not achieve the criterion level of significance.

Further, a partial correlation ($r_{xy \cdot z}$) was also computed to test whether social class was an intervening variable in interpreting the relationship between the specifying variables, active coping and mean disclosure. When the mutual relationships of the variables with social class were partialled out, the correlation between active coping and disclosure in Dilemma I was reduced from $r = +.295$ to $r = +.234$ which was no longer significant; in Dilemma II, from $r = +.392$ to $r = +.324$ ($p < .05$); and in Dilemma III, from $r = +.475$ to $r = +.453$ ($p < .001$). These data suggest that in Dilemmas II and III (problems with close friends and with work), the hypothesis that active coping is positively associated with self-disclosure is supported and that the reason for this relationship is not social class. As active coping increases, self-disclosure increases. Thus, the null hypothesis that no relationship exists between active coping and self-disclosure may be rejected. The data do not substantiate the hypothesis that self-disclosure and defensive coping are inversely related.

When past and predicted future disclosure were examined separately, significant differences were found correlating a defensive-active ratio with predicted future disclosure both in Dilemma I "Wanted to change something in your personal life" and in Dilemma III "Had a problem with work" ($r = -.278$, $p < .05$ and $r = -.399$, $p < .01$ respectively). These data suggest that in certain

situational contexts, a defensive coping strategy may be inversely related to willingness to disclose to a same-sex stranger. However, in view of the lack of statistical significance over all three dilemmas, the data provide equivocal support for the hypothesis.

No significant differences were found between the ratio of defensive to active coping and past disclosure in any of the three dilemmas.

Finally, a series of correlations were calculated to measure the degree to which each of the 19 coping strategies was related to past and future disclosure respectively. Only one significant correlation was found: relative to Dilemma I — "Wanted to change something in your personal life" — a positive association was found between predicted future disclosure and the active coping strategy, "Express your feelings as they are to the other person(s)" ($r = +.371$, $p < .01$). These findings lend further support to the hypothesis that coping processes are influenced by situational factors.

The Process Ratings

The process ratings refer to assessments of 36 interviews of in-patients in all three comparison groups.

Self-disclosure. The correlation between interviewer-rated disclosure and self-predicted disclosure was $r = +.53$ ($p < .001$). Of the 36 patients interviewed, 50% were classified as Type A and Type B respectively. Within each group, the correlation between interviewer-rated disclosure and self-predicted disclosure was $r = +.590$ ($p < .02$) for Type B's and approached significance for

Type A's r = +.467 ($p < .10$). One-way analysis of variance showed no significant differences between the Type A and Type B groups on predicted disclosure and actual disclosure in the interview. This is not surprising since no differences were found, as reported earlier, between the Type A and Type B groups and predicted disclosure.

Active and defensive coping. In response to the three dilemmas, both Type A and Type B groups reported a majority of work-related problems — 73% and 71% respectively. In response to Dilemma I — "Wanted to change something in your personal life" — problems with work were often reported reflecting decisions to change occupation or to return to school to improve occupational status. In this particular sample, on this measure, Type A subjects were not shown to be more job-oriented than Type B subjects as measured by the interview.

A median score was computed for responses to each dilemma; then percentage agreement was calculated between self-rated defensive: active scores and the interviewer-rated coping strategy. Ratio scores above the median were scored "defensive" and scores below the median were scored "active." The respective scores and percentages agreement are shown in Table 6.

Those subjects for whom there was complete agreement between self-rated and interviewer-rated coping strategies were identified by their respective Type A or Type B behavior score and by their predominant coping strategy. They were then classified as either "active" or "defensive." It may be seen on Table 7 that the

TABLE 6. Median Scores and Percentage Agreement between Self-Rated Defensive:Active Scores and Interviewer-Rated Coping Strategies on the Personal Dilemmas Questionnaire

	Median Defensive:Active Coping Score	% Agreement
Dilemma I	0.39 (n = 33)	73
Dilemma II	0.59 (n = 30)	87
Dilemma III	0.30 (n = 32)	53

TABLE 7. Percentage of Sub-Sample[a] Classified as Type A and Type B Who Report a Predominant Active or Defensive Coping Strategy

	Type A			Type B		
	n	% Active	% Defensive	n	% Active	% Defensive
Dilemma I	11	73	27	13	54	46
Dilemma II	11	82	18	6	33	67
Dilemma III	13	58	42	13	46	54

[a]That portion for which 100% agreement existed between the PDQ and interviewer ratings.

percentage of Type A subjects who reported predominantly active coping strategies was greater than those who report predominantly defensive strategies. The findings are less clear relative to Type B subjects who were almost evenly split on Dilemmas I and II. They did report predominantly defensive strategies in response to Dilemma II, suggesting increased use of defensive strategies in interpersonal situations.

Admittedly, this is a small subsample and a rather crude measure of coping, but it does seem consistent with other findings and trends reported in this study. Individuals manifesting Type A behaviors tend to endorse active coping strategies on self-report and in an interview. Those individuals classified as Type B present a more mixed pattern of endorsement that does not permit a definitive interpretation.

Discussion

Procedure for Data Collection

A few comments are in order about data collection in this study before discussion of the major findings. The population under study represented a biased sample at the least because it is based on a population which had sought medical treatment. They were seen only by the author for purposes of data collection. For the patients in the cardiac care unit, this was mandatory insofar as the patients were indeed experiencing life-threatening illness and their social interactions were strictly limited to close family members and medically trained personnel.

An attempt to engage the spouses of the participants in the study failed. It soon became clear that the wives were undergoing as much, if not more, stress than their hospitalized husbands. While it would be of interest to study this group, a procedure must be devised which provides emotional support for the spouses rather than one which compounds the demands placed upon them during the hospitalization period.

As was mentioned earlier, it was difficult to obtain complete questionnaire data on every patient until the procedure was modified to include an interview. The inverview seemed to have socially reinforcing properties which provided participants with an opportunity to interact with the investigator — a feature that was

missing when all data were collected by questionnaire. This may account for the increased participation and complete questionnaire data.

The retrospective nature of the study is perhaps a serious defect in its design. This point was previously raised but warrants reiteration here. Three of the four groups were hospitalized and this experience may have colored their preceptions and self-reports. It is important to note that there are many factors of a medical, clinical, and psychological nature which could have a bearing on both a patient's attitude toward his disease or injury and his subsequent performance on these tasks. The procedure, discussed earlier, does not control for heterogeneity within comparison groups. For example, one myocardial infarction or one type of orthopedic trauma could be appraised as more serious than another. And the influence of individual differences in medical condition could have occurred which in part may account for the results obtained. For example, a patient who discovers it is likely that myocardial infarction will be ruled out may respond differently than one who is grappling with a diagnosis of acute myocardial infarction or with the possibility that he will never walk again. The analyses (i.e., $\underline{F}$ within vs. $\underline{F}$ between) speak to this issue. The only reasonable way to deal with this problem is, of course, to conduct a prospective investigation. Notwithstanding these limitations, this study emphasizes a number of findings of interest. To assist the reader, a summary of findings is provided in Table 8.

TABLE 8. Summary of Findings

Hypothesis 1: On a measure of Type A behavior, coronary subjects are expected to have a significantly higher mean score than non-coronary subjects.

Distribution of the R-JAS Scores in the Sample

R-JAS Score	Post MI n = 10	MI n = 23	MI Ruled Out n = 15	Orthopedic n = 24
M	8.96	9.67	10.00	9.25
SD	4.59	3.46	4.22	3.27

F(3,68) = 0.18 (not significant)

Hypothesis 2: There will be a significant association between a measure of Type A behavior and a measure of self-disclosure.

Product-Moment Correlations between R-JAS Scores and Self-Disclosure

	R-JAS Score	Social Position Partialled Out
Past Disclosure	.298** (n = 67)	.272*
Future Disclosure	.260* (n = 63)	.182

*p < .05; **p < .02

Hypothesis 3: There will be a significant positive association between active, interpersonal coping and self-disclosure.

Product-Moment Correlations between Active Coping and Mean Self-Disclosure Across Three Dilemmas

	Mean Disclosure Score	Social Position Partialled Out
Dilemma I		
Active Coping Score	.295* (n = 52)	.234
Dilemma II		
Active Coping Score	.392** (n = 41)	.324*
Dilemma III		
Active Coping Score	.475*** (n = 54)	.453***

*p < .05; **p < .02; ***p < .001

continued...

TABLE 8. (continued)

Hypothesis 4: There will be a significant negative association between defensive coping and self-disclosure.

Product-Moment Correlations between Defensive Coping and Mean Self-Disclosure Across Three Dilemmas

	Mean Disclosure Score
Dilemma I	
Defensive Coping Score	-.075 (n = 52)
Dilemma II	
Defensive Coping Score	-.063 (n = 41)
Dilemma III	
Defensive Coping Score	-.138 (n = 54)

Hypothesis 5: There will be a significant association between a measure of Type A behavior and a measure of active-defensive coping.

Differences[a] between Type A and Type B Groups and Reported Coping Strategies on the PDQ

	df	F	Significance Level of Difference[b]
Dilemma I			
Get feelings out to someone	1,54	10.42	$p < .005$
Talk with a friend	1,55	7.64	$p < .01$
Express feelings 'as they are' to other person(s)	1,55	13.54	$p < .001$
Dilemma II			
Take positive action	1,42	5.00	$p < .05$
Express feelings 'as they are' to other person(s)	1,42	8.33	$p < .01$
Dilemma III			
Express feelings 'as they are' to other person(s)	1,56	6.62	$p < .025$

[a] As measured by one-way analysis of variance.
[b] Type A group higher on each strategy.

The main positive findings of this study are that (1) self-disclosure and active interpersonal coping are positively associated and (2) that patients manifesting the Type A behavior pattern report not only more past self-disclosure, but also more active coping strategies than do their Type B counterparts. Overall these findings should be considered suggestive, rather than definitive, for two reasons: (1) complete data were not obtained on every subject and (2) over 60 statistical tests were performed on the PDQ data alone — compared with six significant findings — thereby increasing the possibility of obtaining significant relationships by chance.

The Type A Coronary-Prone Behavior Pattern

Contrary to anything the author expected from past research, the mean Type A score of those who were diagnosed as having acute myocardial infarction did not differ significantly from the three comparison groups. Several explanations are proposed to account for this finding. The Revised Jenkins Activity Survey (R-JAS) may not be sensitive enough to discriminate between the two groups — especially if the sample population is primarily characterized by incompletely developed Type A and Type B behavior patterns. Another possible explanation is that the present sample is not representative of the entire population as a whole. To date no researchers have attempted to obtain normative data on any total population. Consequently, base rates in the population as a whole are unknown.

This problem is aggravated by the common psychometric practice among researchers in this area of standardizing individual samples

such that the cut-off points for Type A and Type B behavior patterns differ in every study. This practice is discussed at some length by Caffrey (1978). The JAS is variously scored dichotomously (Type A or Type B) or on a continuum ranging from -30.00 to +30.00. Caffrey (1978) suggests the need for better standardization using a continuous scale, perhaps standardized with a mean of 50.0 and a standard deviation of 10.0. He cautions against procedures which use extreme groups from a distribution of JAS scores as Glass (1977) has done. Although this practice may be useful for hypothesis generation initially, it risks errors by sampling from a limited range of scores and excludes the middle scores.

Thirdly, the findings in this study may reflect regional or social class differences. It is difficult to generalize from the predominant type of study in the field (white-collar professionals) to men in all types of jobs. The Western Collaborative Group Study (WCGS) was not a study of a total or homogeneous population. Of the total sample, 9.9% were laborers whereas approximately 84% were at the top and second levels of occupational responsibility (Rosenman et al., 1964). In the current population under study, 67% of the subjects were in levels II, IV and V as measured by the Hollingshead Index of Social Position (Note 2). The mean differences between the comparison groups may be confounded by disproportionate distributions of age and levels of social position. Glass (1977) however, found significant differences in Type A scores between the MI group and the control groups in the Houston study. In his sample, 88.9% of MI, 83.2% of hospitalized controls and 100% of non-hospitalized controls

were classified at levels III, IV and V using the Hollingshead Index.

The WCGS sample and the population studied by Howard et al. (1976) suggest that the positive association between Type A behavior and higher levels of occupation and education may not be strictly monotonic. Both groups of investigators reported that business managers displayed more coronary-prone behavior than did their executive counterparts. This finding suggests the influence of upward mobility on the development and intensity of Type A behavior pattern.

Regional and international comparisons of the JAS suggest considerable variation in JAS mean scores (Cohen, 1978; Waldron, Zyzanski, Shekelle, Jenkins & Tannenbaum, 1977; Zyzanski, 1978) which underscores the importance of controlling for cultural, educational and occupational factors in evaluating the distribution of Type A behavior in the population. For example, the JAS Type A score was divided at the sample mean of 0.00 for the WCGS population, at -4.70 for the Belgian sample, at -7.70 for a Japanese-American sample in Honolulu, at 3.60 in a sample of North Carolina senior medical students and at -2.60 in the Chicago Detection in Industry Study (Zyzanski, 1978). The overall pattern of mean scores may be consistent with what one would hypothesize from a theory of Type A behavior — as Zyzanski (1978) posits — but does not permit comparison of demographically-defined groups.

It is important to note the paradox that prevails relative to level of education, JAS scores, and incidence of CHD. Level of education was found to be inversely related ($p < .02$) to CHD incidence in both the 39-49 and 50-59 age groups in the WCGS

(Rosenman et al., (1970). However, Waldron and her associates (Waldron et al., 1977) refer to five studies which report a positive correlation between the Type A behavior pattern, as measured by the JAS, and education in men. We need information concerning the prevalence of Type A behavior in a variety of groups to determine the extent to which Type A behavior is related to CHD (Cohen, 1978; Cohen, Matthews & Waldron, 1978). Cohen (1978) calls for more systematic and comparative research to serve two purposes:

> . . . first, to begin assessment of cultural patterns against the same comparative standard . . . and second, to build more middle-range theory about the roles of cultural and behavioral factors in contributing to risk of disease . . . . (p. 197).

In practice, social and economic factors condition the incidence and manifestations of disease and are not inappropriate subjects for scientific investigation. To say that the variables under study are correlated with the Two Factor Index of Social Position does not specify the environment in which an individual lives. As the reader may recall, one shortcoming of the Framingham study is that it did not view people within a social context. Those sociocultural sanctions and beliefs as response systems which interdigitate with individual response systems must not be ignored.

Self-Disclosure and Type A Behavior

A focal question to consider here has to do with the quality of the self-disclosure and the meaning of it. From the present data, it is not known whether high ratings of past disclosure are a result of disclosure on the items to one person or of general disclosure to many

persons on different items. Furthermore, Newcomb, Turner and Converse (1965) suggest that meaningful communication involves disclosure on items relevant to and important to the individual. Further inquiry into these aspects of disclosure would be enlightening.

Several possible interpretations can be offered if we view the Type A group as individuals who were using a strategy of actively trying to master the world by complying with the demand characteristics of the tasks at hand. Seeman and Evans (1962) proposed that and individual's generalized expectancies for control may influence his behavior in a hospital setting. If this is correct, the Type A individuals may have been more comfortable with institutions such as the hospital and have been more inclined to take control by asking questions and seeking more information.

If A's are indeed more competitive, they may have identified the current task — to make oneself known — as a challenge to be met. This presumes an ability to identify the task and then to apply oneself rigorously to accomplish the goal. The process ratings argue against this interpretation inasmuch as no differences were found between the Type A and Type B groups on predicted disclosure and actual disclosure in the interview.

It is of some methodological interest that the future-oriented self-disclosure questionnaire predicted actual behavior in a differential way. This finding provides further corroboration of the results reported by Drag (1968):

> When the investigator was impersonal with subjects prior to the conducting of the experiment, the subjects behaved consistent with the scores obtained on the self-disclosure questionnaire used to select subjects. When the experimenter was more open and personal with subjects, the latter's scores did not predict self-disclosing behavior in the experiment (as cited in Jourard & Resnick, 1970, p. 92).

Achievement-oriented individuals may place more value on verbal skills. The interview may then have represented an opportunity to express verbal achievement. It might be possible, then, to experience some individuals as highly disclosing when in fact they are not. Verbal expression may be a strategy by which to facilitate disclosure from others. The dyadic effects of disclosure have been explored (Jourard, 1971b; Jourard & Resnick, 1970) and have been found to influence levels of disclosure. That a dyadic effect did not prevail in the interview setting argues against this interpretation however.

Characteristics of the interviewer may have elicited competitive behavior in Type A individuals either because of sex differences or more subtle behavioral characteristics which served as stimuli for Type A behavioral responses. This explanation is more likely plausible for those individuals who were interviewed than for those whose questionnaires were self-administered. Yet no statistical differences were found between the two procedures.

As self-disclosure is often talked about in the literature, it is insufficiently clear how the behavioral intent and style of disclosure influences the impact of the disclosure on others. Disclosure delivered in an explosive or hostile manner is less likely to

facilitate reciprocal and affiliative behavior from others. Type A individuals are known to be more aggressive; and the literature suggests that individuals who are coronary-prone are less affiliated (Lynch, 1977). There is not the "we-ness" in the Type A group's disclosure (i.e., the disclosure is not mutualistic), but, rather, the disclosure is more self-centered and competitive.

Coping Strategies, Self-Disclosure, and Type A Behavior

Another major finding is that coping strategies, as distinguished from coping dispositions, do not appear to be clearly or consistently associated with A and B behavior patterns or with self-disclosure. Insofar as it generates total scores which are then interpreted in a dichotomous fashion, the Personal Dilemmas Questionnaire is a measure of coping disposition. It may also be used as a measure of situation-specific coping strategies as it was in this study.

The only consistently significant difference across the three dilemmas was the strategy "Express your feelings 'as they are' to the other person(s)," with Type A subjects endorsing this strategy more frequently than Type B subjects. Inconsistencies within-subject and within-comparison groups suggest the possibility that given coping strategies may be more useful for certain stressful situations than for others, or in particular periods of prolonged crisis, yet not in others. Thus, for example, Hackett and Weisman's (1964) observations that patients can benefit more from denial if there exists a possibility of a positive outcome — as in myocardial infarction in contrast to terminal cancer — are apt.

This raises some psychometric issues about using this type of instrument to measure coping and adaptive potential. Failure to achieve significance among the other variables and the Personal Dilemmas Questionnaire (PDQ) may be due to insensitivity of the measure. A possible explanation for the null effect obtained in this study may be the relatively crude measure of defensive reappraisal. The PDQ clearly has a limited range of behaviors defined as "defensive" (six out of 19 items) and this is further reduced to four items if one uses Lazarus' definitions of defensive reappraisal or palliative modes of coping in the strictest sense. To some extent, the PDQ scales represent an arbitrary set of behaviors, which reflect a particular set of values, largely behavioral in nature. Behaviors such as "procrastination," "stoic resignation," "not doing anything," and "letting someone/something else work it out" were described by subjects in response to the questionnaire. Yet the behaviors were not included on the PDQ and, therefore were not rated by respondents on the scales.

In the future it would be of interest to evaluate the possibility that clusters of behaviors are represented here. For example, those behaviors which were positively associated with Type A scores ["Get your feelings out by talking to someone," "Try to get some perspective by talking it over with a friend," and "Express your feelings 'as they are' to the other person(s)"] may be intercorrelated.

It may also be valuable to assess the subject use of the rating scales. Those individuals who rate themselves at extreme ends of the scale may be manifesting dichotomous thinking whereas those who

utilize the more moderate scores may have a higher tolerance for ambiguity and tend to individualize their behavior to the specific situation at hand.

There is another negative finding that bears comment, especially in the light of the current interest in the situational aspects of coping with life crises. Given that 3 of the 4 comparison groups were hospitalized following a sudden, unexpected stressful event, it was expected that, in response to the PDQ, individuals would describe their hospitalization as a current dilemma. The data do not support this expectation. Of the 62 respondents who were hospitalized, only 9 cited their current affliction or their current hospitalization as problematic or as a source of stress. Of these 9, 6 were designated Type A and 3 as Type B; 2 of the 9 had experienced orthopedic injury, 4 had MI ruled-out and 3 had acute MI. This may partially be an artifact of the PDQ insofar as the questions were open-ended and did not directly ask about experience of the current hospitalization.

A second possible explanation is suggested by the data obtained in this study and is supported by House (1975). Individuals using Pattern A behavior as a coping strategy may not feel able to call on others for help because they cultivate a persona which communicates "There's nothing I can't handle." A few quotations from participants in the study help to illustrate the point: "I tend to handle things especially well. I don't panic in stressful situations"; "I have so many problems at work, but I don't have any that seem puzzling. I always have a solution"; "I pride myself on being able to cope with any

and all situations"; "[I] had a problem with work, but can't say I didn't know what to do because I resolved it."

Given the task on the PDQ — to describe a dilemma which was puzzling and about which one wasn't sure of what to do — some subjects experienced difficulty in responding. A common theme in these responses was one of having made a decision — right or wrong — and, having done so, no dilemma existed which was characterized by uncertainty about the outcome. Therefore, for example, once the decision to seek medical assistance was made, the "dilemma" was resolved and dismissed.

Yet another explanation comes to mind if we consider the hospitalization to be an acute phase of coping with a crisis. Moos and Tsu (1976) conceptualize a bi-phase pattern of coping: "an acute phase in which energy is directed at minimizing the impact of the stress, and a reorganization phase in which the new reality is faced and accepted" (p. 14). Indeed it is quite possible that the failure to mention the stress of hospitalization represented an acute coping response.

Another strategy used by people who cope successfully with stress is to develop a network of friends or professional colleagues whose judgments they trust and whom they can count on to help in times of trouble. Under certain circumstances an increase in affiliative behavior has been observed in response to stressful experiences (Lazarus, Averill & Opton, 1974). To the extent that situational variables are drastically changed in a hospital setting — especially in the cardiac care unit — the patient is transplanted into an

artificial environment that argues against perception of control and limits affiliative behavior. The tasks in the study (particularly the interview) may have represented an opportunity to affiliate or an opportunity to master one's environment in a setting that works against control and mastery by the patient.

Research Considerations

A central obstacle to the development of a unitary approach to coping and adaptation may be premature hypothesis testing. Ethologists and others (House, 1975; Monat & Lazarus, 1978; Payne, 1967; Tinbergen, 1978) caution that hypothesis testing is only appropriate down the line, after the nature and varieties of the behaviors in question have been adequately observed and classified, and when testing of particular theories of phenomena has been executed successfully. Payne (1967) cautions about selecting out significant variables for study out of their ecological context. This choice of methodology may be warranted, but may also lead to serious errors. He cites the experiences of microbiologists in their studies of organisms in pure cultures as but one example of restricted vision in research.

From a practical point of view, clinical workers look toward the possibilities of using knowledge about individual differences in coping to understand the perceptual and cognitive processes that seem to provide a link between external enviornmental events and emotional, neurohormonal and cardiovascular response. These processes require considerable exploration before any hypothesis about causation can be tested. Mechanic (1976a, 1976b) warns against exclusion of perceptions in favor of more objective and more rigorous tests of

hypotheses. This view is most congruent with House's (1975) observation: "The level of stress experienced by a person can be changed by altering the environment or the person or the relation between them" (p. 34). To exclude perceptions and appraisals would be to exclude 50% of the interaction.

Implications for Future Research

This study raises many questions and issues for future research. First, further exploration of other behavioral characteristics of the coronary-prone behavior pattern is clearly needed. Systematic demonstrations of behavioral differences between Type A and Type B behavior patterns is strongly recommended. To accomplish this task it will be necessary to utilize naturalistic (idiographic) as well as experimental (nomethetic) research designs. Systematic study of individuals who exhibit Type A and Type B patterns in their day-to-day behavior in a naturalistic setting would contribute greatly to our present knowledge of the construct. Questions about the nature of and relevant dimensions of the psychological environment which contribute to the development and maintenance of the coronary-prone behavior pattern remain unanswered.

Secondly, replications of the work of Rosenman, Friedman, Jenkins and their associates are strongly indicated as are studies which establish the distribution and stability of the coronary-prone behavior pattern in the general population.

Thirdly, this study raises questions concerning the nature of variables which influence self-disclosure and, more precisely, how disclosure is expressed as a coping strategy. The instruments

currently in use do not provide the respondent with an opportunity to indicate the intimacy level of the items disclosed and, thus, do not take into account differences in value systems.

Finally, there is a need to identify how individual coping responses vary and interact with particular environmental circumstances.

Research to date has not provided the answers, but has strongly suggested the fruitfulness of other questions:

1. To what sources of feedback are individuals with Type A and Type B behavior patterns most likely to respond? And what are the reinforcers? If House (1975) is correct, satisfaction for achievement is a major reinforcer for those who are designated Type A: it is reflected in agression, competition, and ambition. He hypothesized that persons who show extrinsic motivation (status, money, recognition) experience greater occupational stress and consequently develop coronary heart disease. Moreover, he posited that intrinsic motivators avoid high stress work and consequently avoid coronary heart disease. However, social class differences were present which emphasize the complexities of this area of research. Support for House's hypotheses was found among white-collar workers; but intrinsic motivation was prevalent among blue-collar workers who also reported occupational stress and higher levels of heart disease. Cohen (1978) and Cohen et al. (1978) have documented that in some cultures which do not endorse expression of competition and hostility (but rather provide positive reinforcers for support and cooperation) Type A behavior is less manifest. Given these data, it is imperative to more specifically explore how the family, church, social and vocational

achievement relate to the variables in this study.

2. What part does the spouse (or the lack of one) contribute to the development and maintenance of the coronary-prone behavior pattern? Is marital strife a contributing factor? Self-disclosure may represent an attempt to affiliate, but remain unsuccessful because, as the present data suggest, the Type A person may only appear to be disclosing; in reality he may not let himself be known. If the findings of Lynch (1977) and Moriwaki (1973) are corroborated in forthcoming studies, they suggest the importance of cultivating affiliative social behaviors and setting aside time for leisure.

3. Can susceptible individuals decrease their risk? There is no conclusive evidence that people can voluntarily reduce their risks of CHD by modifying risk factors, including behavior pattern. The complexity of stimulus-response relationships increases at higher (cortical) levels of integration in contrast to lower (subcortical) levels. The potential for modification of responses to psychological stimuli is, therefore, much greater than it is for responses to physical or humoral stimuli. If this question could be answered, it would generate important implications for public prevention and for care post-infarction. Work directed toward why people respond differently to comparable stressors and toward identifying how alternative modes of communication and help-seeking can result in behavioral and biochemical consequences which may suggest preventive possibilities.

4. Finally, by what process does one who has experienced MI spontaneously make changes in lifestyle? Several respondents in the present study described major behavior changes after MI, apparently arising from their own motivation rather than in response to advice from others. Research of this sort must necessarily precede any education program aimed at developing enhanced competence to deal successfully with stressful life challenges and to influence one's changes of longevity and quality of lifestyle for the better.

We can look at behavior as an indicator of adaptation patterns but people are stimulus-specific. Stimuli may elicit different responses in the same individual contingent on his appraisal of their significance at that particular time. We witness to what a great degree people change over time in the arts, in literature, and in developmental psychology.

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   R_1 = rejection region, left tail = set of values of $Z < -1.96$.

   R_2 = rejection region, right tail = set of values of $Z > 1.96$.

   A = "acceptance region" = set of values of Z between -1.96 and 1.96.

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APPENDIX A

APPENDIX A

Scoring Criteria for Instruments

The Revised Student Version of the JAS (R-JAS)

Items which were modified or eliminated in the student JAS referring to income, job involvement and job responsibility were re-written for the R-JAS. Almost all of these items came from the Factor J scale. One A-B item was completely eliminated and a substitute inserted in its place. In the student JAS the item read: "Do you maintain a regular study schedule during vacations such as Thanksgiving, Christmas and Easter?"; here "Yes" is a Pattern A answer, and "No" and "Sometimes" are B answers. The revised version eliminated this item and substituted the following: "In the past three years have you ever taken less than you allotted number of vacation days?"; here "Yes" and "My type of job does not provide regular vacations" are Pattern A responses, and "No" is a B response. Five other items on the A-B scale of the student JAS required minor modification. For example, "Do you ever set deadlines or quotas for yourself in courses or other things?" was changed by substituting the words at work or at home for in courses or other things. Similarly, for "How often are there deadlines in your courses?" the underscored words were changed to on your job. Alterations on the other three items were equally minor and need no comment here (Glass, 1977).

The R-JAS is scored by unit-weighting procedures. For each of the 21 items on the A-B scale, the A reponses receive a score of 1, and the B responses receive a score of 0. The mean A-B score was computed, and subjects scoring above the mean were designated Pattern A. Those scoring below the mean were designated Pattern B.

The Personal Dilemmas Questionnaire

The Personal Dilemmas Questionnaire was scored by an unweighted method. For each dilemma, 19 coping behaviors were rated by the respondent on a 7-point scale from very unlikely = 1 to very likely = 7. Items 1, 3, 6, 9, 16 and 18 comprised the defensive scores whereas the remaining 13 items contributed to the active, interpersonal scores. The numerical values assigned to the scale were summed for each subject, yielding both a defensive and an active score for each reported dilemma.

The Jourard Self-Disclosure Questionnaire (Future-Oriented)

The Jourard Self-Disclosure Questionnaire was scored by an unweighted method. Using this method, each item was simply rated by the respondent as follows: 0 = declined not to answer; 1 = withheld some relevant things — did not disclose fully; 2 = withheld nothing relevant — disclosed fully. The numerical values assigned to the ratings were summed for each subject to arrive at unweighted self-disclosure scores on two dimensions: past and predicted future self-disclosure.

Two formats were used for this questionnaire. In the first, subjects were asked to predict their level of disclosure on 40 topics to a same-sex stranger. A second group of subjects was asked to predict level of disclosure on the same topics to an opposite-sex stranger. Because the Jourard format used a separate answer sheet which was confusing for respondents, the second format eliminated the separate answer sheet. The disclosure scales were placed next to the topics and the subjects circled the appropriate answer. Both versions of the questionnaire are included in Appendix B.

The Hollingshead Two-Factor Index of Social Position

To calculate the Index of Social Position score for an individual, weighted scale values for occupation and education are combined. These scores may be divided into groups of scores or arranged on a continuum. Score groups are divided as follows (Hollingshead, Note 2):

Social Class	Range of Computed Scores
I	11 - 17
II	18 - 27
III	28 - 43
IV	44 - 60
V	61 - 71

The range of scores on a continuum is from a low of 11 to a high of 77. Note that the higher the score, the lower the class. This is confusing because a negative correlation doesn't indicate an inverse relationship, but rather a positive one. By reflecting the variable, as was done in the present study, the sign of the correlation is congruent with the direction of the relationship.

The Process Ratings

These ratings refer to assessments of 36 interviews of inpatients in all three comparison groups. There were two such assessments: (1) a rating was made of the predominant coping mode (active or defensive) which was described by the patient in each of the three dilemmas in response to the question "What would you do if you had to face each of these dilemmas tomorrow?"; and (2) a rating of actual self-disclosure in the interview setting. The ratings were made by listening to tape recordings of the interviews, by the interviewer, as well as another psychologist who did not know the diagnosis nor the A-B designation of the subject so that reliability could be assessed. The correlations between the two sets of independant ratings were 0.82 and 0.94 on self-disclosure and predominant coping strategy respectively.

Self-disclosure. Many detailed criteria were used in determining level of self-disclosure, and a clinical judgment was made for each patient based on his total interview responses. Latency time to offering spontaneous information was recorded. Spontaneously offering information about oneself rather than responding to standard prompts put a person toward the higher end of the disclosure dimension. Number of prompts, the number of dilemmas described, the recency of each dilemma, the intimacy of the topic and the use of the first person in the descriptions were rated. Willingness to report specific details about religion, income level, education, occupation, and leisure activities was taken into consideration.

Self-disclosure was treated as one dimension, and rated on a scale from 0 to 7, with high ratings implying high self-disclosure and low ratings implying low self-disclosure. A subjective rating of disclosure was made after identifying extreme cases. Examples from responses considered to be low self-disclosure (0-1) are, "There's a lot of things a person could change in his personal life, but I'm happy with things now," or "Oh, yeah, had that [a problem with work] but they've been solved. No problems." An example of disclosure in the mid-range (4-5) is, "What I should be doing is getting stress down in my life and I've really increased it .... I never seem to manage to look at things and evaluate them well enough as to how much time and work is involved." An example of disclosure in the upper range (6-7) is, "Recently I discovered I had an inability to have an erection because of my hypertension; my wife 'shamed' me into going to the doctor."

Active-defensive coping. Process ratings for the reported personal dilemmas were scored dichotomously using the outstanding coping strategy mentioned in the interview as the criterion. Examples of responses considered to be active are, "Discussed with colleagues and explored other alternatives"; "Checked it out as best I could"; "Studied about it ... Didn't jump right in"; "Express my feelings ... even if other people are not happy about it." Examples of defensive responses are, "With a bottle of Scotch"; Did nothing about it"; "Always wanted to be a junk man or policeman, but then I got married. That kinda stopped that." For ease of calculation, the median score was computed for responses to each dilemma and % agreement between

self-rated active/defensive coping was calculated with the interviewer-rated coping strategy.

APPENDIX B

Edward W. Sparrow Hospital
in cooperation with
Michigan State University
Department of Psychology

DEPARTMENTAL RESEARCH CONSENT FORM

1. I have freely consented to take part in a scientific study being conducted by Joyce Baxter, R.N.

   under the supervision of Dr. Dozier W. Thornton

   Academic Title: Professor of Psychology

2. The study has been explained to me and I understand the explanation that has been given and what my participation will involve.

3. I understand that I am free to discontinue my participation in the study at any time without penalty.

4. I understand that I may refuse to answer any particular question without penalty.

5. I understand that the results of the study will be treated in strict confidence, and that I will remain anonymous. Within these restrictions, results of the study will be made available to me at my request.

6. I understand that my participation in the study does not guarantee any beneficial results to me.

7. I understand that, at my request, I can receive additional explanation of the study after my participation is completed.

8. I understand that no individual scores, including my own, will be reported to anyone. Only group scores will be utilized and no individual scores will be traceable from reported group results.

Signed _____

Date _____

SUMMARY OF STUDY SUBMITTED TO RESPONDENTS

MICHIGAN STATE UNIVERSITY

DEPARTMENT OF PSYCHOLOGY
SNYDER HALL

EAST LANSING · MICHIGAN · 48824

Dear :

Some time ago you participated in a study on how people identify and respond to stress in various aspects of their everyday lives. In accordance with our agreement, I am sending you a summary of the results of that study now that it is completed.

Seventy-two men participated in the study. These men were divided into four groups: (1) those who had had a coronary ("heart attack") at least one year prior to this study; (2) those who has been hospitalized with a coronary at the time of the study; (3) those who were thought initially to have had a coronary but later were found not to have had one; and (4) those who were hospitalized for an orthopedic (bone or muscle) injury.

Relationships of Type A behavior to active and defensive coping strategies in the men with and without coronary heart disease were examined. Type A behavior has been identified as a risk factor in the development of coronary heart disease. (You can read about it in a paperback by Friedman and Rosenman, Type A Behavior and Your Heart, 1978). People with Type A behavior tend to be agressive, hard-driving, competitive, goal-oriented and pressured by time and deadlines. People with Type B behavior are more relaxed, achieve without being aggressive and competitive, and don't suffer from the "hurry sickness" characteristic of the Type A's. In this study, contrary to published findings, the coronary groups not obtain higher average scores than the non-coronary groups on Type A behavior. Although no other group differences were found, when individuals were re-classified according to behavior pattern, Type A's reported more past self-disclosure than B's. No statistically significant relationships were found between Type A behavior and predicted future self-disclosure. Average self-disclosure scores and active coping behaviors were positively associated.

On a self-report measure and, in some cases, in an interview (in which you were asked to describe how you handled a problem in your personal life, a problem with a personal friend and a problem with work) people exhibiting Type A behaviors tended to select active, interpersonal coping strategies. Examples of these behaviors are (1) "Get your feelings out by talking to someone" and (2) "Express your feelings 'as they are' to the other person(s)." In certain situations, defensive coping strategies such as (1) "Get out of the situation" and (2) "Don't worry about it; everything will probably work out fine" were inversely related to willingness to self-disclose to a stranger. This means that the more a person was likely to talk about himself to a stranger, the less likely he was to use defensive coping behaviors.

Your assistance was useful in the sense that I have now had an opportunity to test some of the instruments that are used in this field and our general conversations have given me some hints about the kinds of questions I would like to investigate in my doctoral research, For example, it now appears crucially important to look

at the effects of the stress of a coronary on other family members and at the process by which people who have sustained a coronary "change gears" during their recovery. As I wrote in my master's thesis, my heartfelt thanks are extended to each of you who, at a time of life crisis, were willing to participate in this study by sharing a part of yourself with me. Thank you ever so much.

Cordially,

Joyce K. Baxter, R.N., M.A.

HOW DO YOU COPE?

We are interested in how people perceive and respond to stress in various aspects of their everyday lives. We should like to know how you handle stressful situations. We would like you to answer all the questions on the pages that follow.

Please answer the questions on the following pages by marking the answers that are true for you. Each person is different, so there is no "right" or "wrong" answer. Of course, all you tell us is strictly confidential — to be seen only by the research team. Do not ask anyone else about how to reply to the items. It is your personal opinion that we want.

Your assistance will be greatly apprecited.

[Demographic Questionnaire]

The first few questions ask some general descriptive information about yourself.

1. What is your age? _____

2. Were you the oldest, youngest, middle or only child in your family? (Please check one category.)

   Oldest _____
   Youngest _____
   Middle _____
   Only child _____

3. a. What is your religious preference? (Please check one category.)

   Catholic _____
   Protestant _____ (denomination)
   Jewish _____
   Other _____ (specify)
   None _____

   b. If this differs from the religious preference of your parents, please specify their preference. _____

4. What was the highest grade or class that you completed in school? (Please circle one category.)

   a. Less than seven years of school.
   b. Junior high school.
   c. Some high school.
   d. High school graduate.

(continued)

4. e. Some college (completed at least one year).
   f. College graduate (completed four years of college).
   g. Some graduate study.
   h. Completed graduate study.

Now we would like to ask you about your work and lesiure time activities.

5. What is your occupation?_____

6. What is your exact job title?_____

7. Please briefly describe what you do in your job.

_____

_____

_____

_____

8. Into which category did your family income fall last year? (Please check one category.)

Under $3,000	_____
Between $3,000 and $5,000	_____
Between $5,000 and $10,000	_____
Between $10,000 and $20,000	_____
Over $20,000	_____

9. What kinds of things do you enjoy when you're not working at your occupation?

_____

_____

_____

Now we would like to ask you about something a bit different. The rest of this questionnaire is divided into three parts, each of which relates to a different aspect of how people cope with stressful situations. Specific directions precede each of the three sections. If you have any questions about these directions, please call us at 393-4428.

ACTIVITY SURVEY (REVISED FORM T)

[The Revised Student Version of the JAS]

For each of the following items, please circle the number of the ONE best answer:

1. Do you ever have trouble finding time to get your hair cut or styled?

   1. Never 2. Occasionally 3. Almost always

2. Does work "stir you into action?"

   1. Less often than most working adults
   2. About average
   3. More often than most working adults

3. Is your everyday life filled mostly by

   1. Problems needing solution
   2. Challenge needing to be met
   3. A rather predictable routine of events
   4. Not enough things to keep me interested or busy

4. Some people live a calm, predictable life. Others find themselves often facing unexpected changes, frequent interruptions, inconveniences or "things going wrong." How often are you faced with these minor (or major) annoyances or frustrations?

   1. Several times a day 3. A few times a week 5. Once a month or less
   2. About once a day 4. Once a week

5. When you are under pressure or stress, do you usually

   1. Do something about it immediately
   2. Plan carefully before taking any action

6. Ordinarilly, how rapidly do you eat?

   1. I'm usually the first one finished
   2. I eat a little faster than average
   3. I eat at about the same speed as most people
   4. I eat more slowly than most people

7. Has your spouse of some friend ever told you that you eat too fast?

   1. Yes, often 3. No, no one has told me that
   2. Yes, once or twice

For each of the following items, please circle the number of the ONE best answer.

8. How often do you find yourself doing more than one thing at a time, such as working while eating, reading while dressing, figuring out problems while driving?

   1. I do two things at once whenever practical
   2. I do this when I'm short of time
   3. I rarely or never do more than one thing at a time

9. When you listen to someone talking, and this person takes too long to come to the point, do you feel like hurrying him along?

   1. Frequently 2. Occasionally 3. Almost never

10. How often do you actually "put words in his mouth" in order to speed things up?

    1. Frequently 2. Occasionally 3. Almost never

11. If you tell your spouse or a friend that you will meet them somewhere at a definite time, how often do you arrive late?

    1. Once in a while 2. Rarely 3. I am never late

12. Do you find yourself hurrying to get places even when there is plenty of time?

    1. Often 2. Occasionally 3. Rarely or 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. Will you

    1. Sit and wait?
    2. Walk about while waiting?
    3. Usually carry some reading matter or writing paper so you can get something done while waiting?

14. When you have to "wait in line," such as at a restaurant, a store, or the post office, do you

    1. Accept it calmly?
    2. Feel impatient but do not show it?
    3. Feel so impatient that someone watching could tell you were restless?
    4. Refuse to wait in line, and find ways to avoid such delays?

For each of the following items, please circle the number of the ONE best answer.

15. When you play games with young children about 10 years old, how often do you purposely let them win?

    1. Most of the time
    2. Half the time
    3. Only occasionally
    4. Never

16. Do most people consider you to be

    1. Definitely hard-driving and competitive?
    2. Probably hard-driving and competitive?
    3. Probably more relaxed and easy-going?
    4. Definitely more relaxed and easy-going?

17. Nowadays, do you consider yourself to be

    1. Definitely hard-driving and competitive?
    2. Probably hard-driving and competitive?
    3. Probably more relaxed and easy-going?
    4. Definitely more relaxed and easy-going?

18. How would your spouse rate you?

    1. Definitely hard-driving and competitive?
    2. Probably hard-driving and competitive?
    3. Probably more relaxed and easy-going?
    4. Definitely more relaxed and easy-going?

19. How would your spouse rate your general level of activity?

    1. Too slow. Should be more active.
    2. About average. Is busy much of the time.
    3. Too active. Needs to slow down.

20. Would people who know you well agree that you take your work too seriously?

    1. Definitely Yes
    2. Probably Yes
    3. Probably No
    4. Definitely No

21. Would people who know you well agree that you have less energy than most people?

    1. Definitely Yes
    2. Probably Yes
    3. Probably No
    4. Definitely No

For each of the following items, please circle the number of the ONE best answer.

22. Would people who know you well agree that you tend to get irritated easily?

    1. Definitely Yes
    2. Probably Yes
    3. Probably No
    4. Definitely No

23. Would people who know you well agree that you tend to do most things in a hurry?

    1. Definitely Yes
    2. Probably Yes
    3. Probably No
    4. Definitely No

24. Would people who know you well agree that you enjoy "a contest" (competition) and try hard to win?

    1. Definitely Yes
    2. Probably Yes
    3. Probably No
    4. Definitely No

25. Would people who know you well agree that you get a lot of fun out of your life?

    1. Definitely Yes
    2. Probably Yes
    3. Probably No
    4. Definitely No

26. How was your "temper" when you were younger?

    1. Fiery and hard to control
    2. Strong, but controllable
    3. No problem
    4. I almost never got angry

27. How is you "temper" nowadays?

    1. Fiery and hard to control
    2. Strong, but controllable
    3. No problem
    4. I almost never get angry

28. When you are in the midst of working and someone interrupts you, how do you usually feel inside?

    1. I feel O.K. because I work better after an occasional break.
    2. I feel only mildly annoyed.
    3. I really feel irritated because most such interruptions are unnecessary.

29. How often are there deadlines in your work? (If deadlines occur irregularly, please circle the closest answer below)

    1. Daily or more often 2. Weekly 3. Monthly 4. Never

For each of the following items, please circle the number of the ONE best answer.

30. Do these deadlines usually

    1. Carry minor pressure because of their routine nature?
    2. Carry considerable pressure, since delay would upset things a great deal?

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

    1. No 2. Yes, but only occasionally 3. Yes, once per week or more often

32. When you have to work against a deadline, is the quality of your work

    1. Better? 2. Worse? 3. The same? (pressure makes no difference)

33. At work or at home do you ever keep two projects moving forward at the same time by shifting back and forth rapidly from one to the other?

    1. No, never
    2. Yes, but only in emergencies
    3. Yes, regularly

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

    1. Yes
    2. My type of work does not provide regular vacations
    3. No

35. How often do you go to your place of employment when it is officially closed (such as nights or weekends)? If this is not possible, circle here: 0

    1. Rarely or never
    2. Occasionally (less than once a week)
    3. Once or more a week

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

    1. Rarely or never
    2. Once a week or less often
    3. More than once a week

For each of the following items, please circle the number of the ONE best answer.

37. When you find yourself getting tired while working, do you usually

    1. Slow down for a while until your strength comes back.
    2. Keep pushing yourself at the same pace in spite of the tiredness.

38. When you are in a group, do the other people tend to look to you to provide leadership?

    1. Rarely
    2. About as often as they look to others
    3. More often than they look to others

39. Do you make yourself written lists of "things to do" to help you remember what needs to be done?

    1. Never 2. Occasionally 3. Frequently

IN EACH OF THE FOLLOWING QUESTIONS, PLEASE COMPARE YOURSELF WITH THE AVERAGE EMPLOYEE AT YOUR PLACE OF EMPLOYMENT. PLEASE CIRCLE THE MOST ACCURATE DESCRIPTION.

40. In amount of effort put forth, I give

Much more effort	A little more effort	A little less effort	Much less effort

41. In sense of responsibility, I am

Much more responsible	A little more responsible	A little less responsible	Much less responsible

42. I find it necessary to hurry

Much more of the time	A little more of the time	A little less of the time	Much less of the time

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

Much more precise	A little more precise	A little less precise	Much less precise

44. I approach life in general

Much more seriously	A little more seriously	A little less seriously	Much less seriously

PERSONAL DILEMMAS QUESTIONNAIRE

Listed below are a number of incidents that most people encounter in their day-to-day lives. Some or all of these situations may have occurred to you during the past three months. We are interested in having you think about these events and how you dealt with them. For many of these "events" a number of examples may come to mind. Choose the one that seems to you most puzzling — where you weren't sure you knew what to do — the one that was a dilemma for you personally. We'd like you to briefly describe an actual example of each of these events and to describe what you did. In thinking about this, try to recall all the steps you took in response to the dilemma.

Part I

1. Wanted to change something in your personal life.

A. Briefly describe an actual example

B. Describe in detail what you did about it.

2. Had a problem with a close friend, but you weren't sure of what to do.

   A. Briefly describe an actual example.

   B. Describe in detail what you did about it.

3. Had a problem with work, but weren't sure of what to do.

   A. Briefly describe an actual example.

   B. Describe in detail what you did about it.

Part II

Now look over the personal situations you've just described and think about what you would do if you had to face each of these dilemmas tomorrow. This time, rather than write out what you would do, we would like you to check on the following scales how likely or unlikely you would respond in these ways to each of the personal situations you described in Part I. You may, of course, check as many as seem appropriate to represent what you would do if you had to face the problem tomorrow.

ILLUSTRATION:

If tomorrow you had to face the first personal dilemma you described in Part I — wanting to change something in you personal life — you might think of "talking it over with a friend." If you felt that this were somewhat likely, then you would mark an X on the scale as follows:

Talk it over with a friend.

If, on the other hand, you felt it would be very unlikely that you would talk over this dilemma with a friend, you would mark X on the scale as follows:

Talk it over with a friend.

Following are a set of scales for each of the three dilemmas you described in Part I. Please indicate how likely or unlikely you would be to respond to your dilemmas in the following 19 ways.

I. Wanted to change something in your personal life. How likely is it that you would:

1. Try to see the humorous aspects of the situation.
   Very likely ←—|—|—|—|—|—|—→ Very unlikely
2. Take some positive, concerted action on the basis of your present understanding of the situation.
   Very likely ←—|—|—|—|—|—|—→ Very unlikely
3. Not worry about it. Everything will probably work out fine.
   Very likely ←—|—|—|—|—|—|—→ Very unlikely
4. Talk it over with the person(s) in the situation to see if you can work it out.
   Very likely ←—|—|—|—|—|—|—→ Very unlikely
5. Try to put yourself in the other's shoes.
   Very likely ←—|—|—|—|—|—|—→ Very unlikely
6. Become involved in other activities in order to help keep your mind off the problem.
   Very likely ←—|—|—|—|—|—|—→ Very unlikely
7. Draw upon your past experience from a similar situation.
   Very likely ←—|—|—|—|—|—|—→ Very unlikely
8. Seek some professional help or advice.
   Very likely ←—|—|—|—|—|—|—→ Very unlikely
9. Get out of the situation.
   Very likely ←—|—|—|—|—|—|—→ Very unlikely
10. Get your feelings out by talking to someone.
    Very likely ←—|—|—|—|—|—|—→ Very unlikely
11. Make several alternate plans for handling the situation; after all, you never know which one might work.
    Very likely ←—|—|—|—|—|—|—→ Very unlikely
12. Try to get some perspective by talking it over with a friend.
    Very likely ←—|—|—|—|—|—|—→ Very unlikely
13. Re-examine your own thoughts and feelings--do a lot of inner looking.
    Very likely ←—|—|—|—|—|—|—→ Very unlikely
14. Express your feelings "as they are" to the other person(s).
    Very likely ←—|—|—|—|—|—|—→ Very unlikely
15. Try something experimental to see if it works.
    Very likely ←—|—|—|—|—|—|—→ Very unlikely
16. Try to reduce your tension; for example, by smoking, drinking, exercise.
    Very likely ←—|—|—|—|—|—|—→ Very unlikely
17. Act spontaneously--do the first thing that comes to mind.
    Very likely ←—|—|—|—|—|—|—→ Very unlikely
18. Be prepared to expect the worst.
    Very likely ←—|—|—|—|—|—|—→ Very unlikely
19. Seek additional information by reading up on the situation.
    Very likely ←—|—|—|—|—|—|—→ Very unlikely

WHO KNOWS YOU?

[The Jourard Self-Disclosure Questionnaire (Future-Oriented)]

Format I

People differ in the extent to which they let other people know them. We are seeking to investigate what people tell others about themselves. On the next page there is a list of 40 topics that pertain to you. You will also find a special answer sheet. On the answer sheet, you will see two ruled columns, "A" and "B". "A" has the heading "I have revealed information about this item to someone in my past." "B" column has the heading "Willing to disclose information about this item to a same-sex stranger on a first encounter." You are requested to indicate how much information about each topic you have told someone in your past and how much you would be willing to disclose to a stranger of the same sex that you have just met.

Write in a 0 in column A on each topic if you know you have never talked about that item to another person.

Write in a 0 in column B on each topic if you would be unwilling to talk about that item to a same-sex stranger.

Write in a 1 in column A on each topic if you have talked in general terms about that item, but not in full detail. Another person has been given only a general idea about that particular side of you.

Write in a 1 in column B if you would be willing to talk in general terms about a given topic to a stranger of the same sex.

Write in a 2 in column A only if you know that you have talked fully to another person about that particular topic. Use a 2 only for those topics where you know that another person has full and accurate information about you because you have taken the trouble to confide fully.

Write in a 2 in column B only on those topics which you would be willing to confide completely to a stranger of the same sex.

ILLUSTRATION

If you have never told anyone how you feel about your overall appearance, you would write in a 0 in column A. If you have told someone that you are more or less satisfied or dissatisfied with your looks, but have never confided more, you would write in a 1 in Column A. You would only write in 2 if you had talked about your appearance to someone in full detail, something like this: "I like my face, but I'm not satisfied with the way my teeth look. I think I'm about 10 pounds overweight. My feet are too big." The same procedure would

hold for Column B depending upon how deeply you would be willing to confide this same information to a stranger.

TOPICS

1. What you dislike about your overall appearance.
2. The things about your appearance that you like most, or are proudest of.
3. Your chief health concern, worry, or problem, at the present time.
4. Your favorite spare-time hobbies or interests.
5. Your food dislikes at present.
6. Your religious activity at present — whether or not you go to church; which one; how often.
7. Your personal religious views.
8. Your favorite reading materials — kinds of magazines, books, or papers you usually read.
9. What particularly annoys you most about your spouse.
10. Whether or not you have sex problems, and the nature of these problems, if any.
11. An accurate knowledge of your sex life up to the present — e.g., the names of your sex partners in the past and present, if any; your ways of getting sexual gratification.
12. Things about your own personality that worry you or annoy you.
13. The chief pressures and strains in your daily work.
14. Things about the future that you worry about at present.
15. What you are most sensitive about.
16. What you feel the guiltiest about, or most ashamed of in your past.
17. Your views about what is acceptable sex morality for people to follow.
18. The kinds of music you enjoy listening to the most.
19. The subjects you did not, or do not like at school.
20. Whether or not you do anything special to maintain or improve your appearance, e.g., diet, exercise, etc.
21. The kind of behavior in others that most annoys you, or makes you furious.
22. The characteristics of your father that you do not like, or did not like.
23. Characteristics of your mother that you do not like, or did not like.

24. Your most frequent daydream — what you daydream about most.
25. The feelings you have the most trouble controlling, e.g., worry, depression, anger, jealousy, etc.
26. The biggest disappointment that you have had in your life.
27. How you feel about your choice of life work.
28. What you regard as your chief handicaps to doing a better job in your work or studies.
29. Your views on the segregation of whites and blacks.
30. Your thoughts and feelings about other religious groups than your own.
31. Your strongest ambition at the present time.
32. Whether or not you have planned some major decision in the near future, e.g., a new job, break engagement, get married, divorce, buy something big.
33. Your favorite jokes — the kind of jokes you like to hear.
34. Whether or not you have savings, if so, the amount.
35. The possessions you are proudest of, and take greatest care of, e.g. your car, or musical instrument, or furniture, etc.
36. How you usually sleep, e.g., well, or poorly, or with help of drugs.
37. Your favorite television programs.
38. Your favorite comics.
39. The groups or clubs or organizations you belong to, e.g. fraternity, lodge, bridge club, YMCA, professional organizations, etc.
40. The beverages you do not like to drink, e.g., coffee, tea, beer, liquor, etc., and your <u>preferred</u> beverages.

ANSWER SHEET

0 = have not or will not reveal information

1 = have talked or would talk in general terms

2 = have confided or would confide fully

	A	B		A	B
	I have revealed information to someone in my past	Willing to disclose to a same-sex stranger on a first encounter		I have revealed information to someone in my past	Willing to disclose to a same-sex stranger on a first encounter
1.			21.		
2.			22.		
3.			23.		
4.			24.		
5.			25.		
6.			26.		
7.			27.		
8.			28.		
9.			29.		
10.			30.		
11.			31.		
12.			32.		
13.			33.		
14.			34.		
15.			35.		
16.			36.		
17.			37.		
18.			38.		
19.			39.		
20.			40.		

WHO KNOWS YOU?

[The Jourard Self-Disclosure Questionnaire (Future-Oriented)]

Format II

People differ in the extent to which they let other people know them. We are seeking to investigate what people tell others about themselves. Below there is a list of 40 topics that pertain to you. To the right, you will also find a column with the heading "I have revealed information about this item to someone in my past." You are requested to indicate how much information about each topic you have told someone in your past.

Circle a 0 for each topic if you have never talked about that topice to another person.

Circle a 1 for each topic if you have talked in general terms about that topic, but not in full detail. Another person has been given only a general idea about that particular side of you.

Circle a 2 for each topic only if you know that you have talked fully to another person about that particular topic. Circle a 2 only when you know that another person has full and accurate information about you because you have taken the trouble to confide fully.

ILLUSTRATION

If you have never told anyone how you feel about your overall appearance, circle a 0. If you have told someone that you are more or less satisfied or dissatisfied with your looks, but have never confided more, you would circle a 1. You would only write in a 2 if you talked about your appearance to someone in full detail, something like this: "I like my face, but I'm not satisfied with the way my teeth look. I think I'm about 10 pounds overweight. My feet are too big."

I have revealed information to someone in my past

0 = have not revealed information 1 = have talked in general terms 2 = have confided fully

	TOPICS			
1.	What I dislike about my overall appearance	0	1	2
2.	The things about my appearance that I like most, or am proudest of.	0	1	2
3.	My chief health concern, worry, or problem, at the present time.	0	1	2

I have revealed information to someone in my past

0 = have not revealed information 1 = have talked in general terms 2 = have confided fully

	TOPICS			
4.	My favorite spare-time hobbies or interests.	0	1	2
5.	My food dislikes at present.	0	1	2
6.	My religious activity at present — whether or not I go to church; which one, how often.	0	1	2
7.	My personal religious views.	0	1	2
8.	My favorite reading material — kinds of magazines, books, or papers I usually read.	0	1	2
9.	What particularly annoys me most about my spouse.	0	1	2
10.	Whether or not I have sex problems, and the nature of these problems, if any.	0	1	2
11.	An accurate knowledge of my sex life up to the present — for example, the names of my sex partners in the past and present, if any; my ways of getting sexual gratification.	0	1	2
12.	Things about my own personality that worry me or annoy me.	0	1	2
13.	The chief pressures and strains in my daily work.	0	1	2
14.	Things about the future that worry me at present.	0	1	2
15.	What I am most sensitive about.	0	1	2
16.	What I feel the guiltiest about, or most ashamed of in my past.	0	1	2
17.	My views about what is acceptable sex morality for people to follow.	0	1	2
18.	The kinds of music I enjoy listening to the most.	0	1	2
19.	The subjects I did not, or do not like at school.	0	1	2
20.	Whether or not I do anything special to maintain or improve my appearance; for example, diet, exercise.	0	1	2
21.	The kind of behavior in others that most annoys me, or makes me furious.	0	1	2

I have revealed information to someone in my past

0 = have not revealed information 1 = have talked in general terms 2 = have confided fully

	TOPICS			
22.	The characteristics of my father that I do not like, or did not like.	0	1	2
23.	Characteristics of my mother that I do not like, or did not like.	0	1	2
24.	My most frequent daydream — what I daydream about most.	0	1	2
25.	The feelings I have the most trouble controlling; for example, worry, depression, anger, jealousy, etc.	0	1	2
26.	The biggest disappointment that I have had in my life.	0	1	2
27.	How I feel about my choice of life work.	0	1	2
28.	What I regard as my chief handicaps to doing a better job in my work or studies.	0	1	2
29.	My views on the segregation of whites and blacks.	0	1	2
30.	My thoughts and feelings about other religious groups than my own.	0	1	2
31.	My strongest ambition at the present time.	0	1	2
32.	Whether or not I have planned some major decision in the near future, for example, a new job, buying something big, getting married or divorced, etc.	0	1	2
33.	My favorite jokes — the kind of jokes I like to hear.	0	1	2
34.	Whether or not I have savings; if so, the amount.	0	1	2
35.	The possessions I am proudest of, and take greatest care of; for example, my car, musical instrument, furniture, etc.	0	1	2
36.	How I usually sleep; for example, well or poorly, or with help of drugs.	0	1	2
37.	My favorite television programs.	0	1	2
38.	Your favorite comics.	0	1	2

I have revealed information to someone in my past

0 = have not revealed information | 1 = have talked in general terms | 3 = have confided fully

	TOPIC			
39.	The groups or clubs or organizations I belong to; for example, fraternity, lodge, bridge club, YMCA, professional organizations, etc.	0	1	2
40.	The beverages I do not like to drink; for example, coffee, tea, beer, liquor, etc., and my preferred beverages.	0	1	2

Below there is a list of 40 topics that pertain to you. To the right, you will also find a column with the heading "Willing to disclose information about this item to an opposite-sex stranger on a first encounter." You are requested to indicate how much you would be willing to tell a stranger of the opposite sex who you have just met.

Circle an 0 for each topic if you would be unwilling to talk about that topic to a stranger of the opposite sex.

Circle a 1 for each topic if you would be willing to talk in general terms about a given topic to a stranger of the opposite sex.

Circle a 2 only if you would be willing to confide completely about the topic to a stranger of the opposite sex.

Willing to disclose to an opposite-sex stranger on first encounter

0 = would not reveal information | 1 = would talk in general terms | 2 = would confide fully

	TOPICS			
1.	What I dislike about my overall appearance.	0	1	2
2.	The things about my appearance that I like most, or am proudest of.	0	1	2
3.	My chief health concern, worry, or problem, at the present time.	0	1	2
4.	My favorite spare-time hobbies or interests.	0	1	2
5.	My food dislikes at present.	0	1	2

Willing to disclose to an opposite-sex stranger on first encounter

0 = would not reveal information 1 = would talk in general terms 2 = would confide fully

	TOPICS			
6.	My religious activity at present — whether or not I go to church; which one; how often.	0	1	2
7.	My personal religious views.	0	1	2
8.	My favorite reading material — kinds of magazines, books, or papers I usually read.	0	1	2
9.	What particularly annoys me most about my spouse.	0	1	2
10.	Whether or not I have sex problems, and the nature of these problems, if any.	0	1	2
11.	An accurate knowledge of my sex life up to the present — for example, the names of my sex partners in the past and present, if any; my ways of getting sexual gratification.	0	1	2
12.	Things about my own personality that worry me or annoy me.	0	1	2
13.	The chief pressures and strains in my daily work.	0	1	2
14.	Things about the future that worry me at present.	0	1	2
15.	What I am most sensitive about.	0	1	2
16.	What I feel the guiltiest about, or most ashamed of in my past.	0	1	2
17.	My views about what is acceptable sex morality for people to follow.	0	1	2
18.	The kinds of music I enjoy listening to the most.	0	1	2
19.	The subjects I did not, or do not like at school.	0	1	2
20.	Whether or not I do anything special to maintain or improve my appearance; for example, diet, exercise.	0	1	2
21.	The kind of behavior in others that most annoys me, or makes me furious.	0	1	2

Willing to disclose to an opposite-sex stranger on first encounter

0 = would not reveal information 1 = would talk in general terms 2 = would confide fully

	TOPICS			
22.	The characteristics of my father that I do not like, or did not like.	0	1	2
23.	Characteristics of my mother that I do not like, or did not like.	0	1	2
24.	My most frequent daydream — what I daydream about most.	0	1	2
25.	The feelings I have the most trouble controlling; for example, worry, depression, anger, jealousy, etc.	0	1	2
26.	The biggest disappointment that I have had in my life.	0	1	2
27.	How I feel about my choice of life work.	0	1	2
28.	What I regard as my chief handicaps to doing a better job in my work or studies.	0	1	2
29.	My views on the segregation of whites and blacks.	0	1	2
30.	My thoughts and feelings about other religious groups than my own.	0	1	2
31.	My strongest ambition at the present time.	0	1	2
32.	Whether or not I have planned some major decision in the near future; for example, a new job, buying something big, getting married or divorced, etc.	0	1	2
33.	My favorite jokes — the kind of jokes I like to hear.	0	1	2
34.	Whether or not I have savings; if so, the amount.	0	1	2
35.	The possessions I am proudest of, and take greatest care of; for example, my car, musical instrument, furniture, etc.	0	1	2
36.	How I usually sleep; for example, well or porrly or with help of drugs.	0	1	2
37.	My favorite television programs.	0	1	2
38.	My favorite comics.	0	1	2

Willing to disclose to an opposite-sex stranger on first encounter

0 = would not reveal information 1 = would talk in general terms 2 = would confide fully

	TOPICS			
39.	The groups or clubs or organizations I belong to; for example, fraternity, lodge, bridge club, YMCA, professional organizations, etc.	0	1	2
40.	The beverages I do not like to drink; for example, coffee, tea, beer, liquor, etc., and my preferred beverages.	0	1	2