# COPING FLEXIBILITY: INFLUENCING APPRAISALS OF STRESS

1992

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GRADUATE EDUCATION

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Title of Dissertation: "Coping Flexibility: Influencing Appraisals of Stress"

Name of Candidate: Naomi Lester
Doctor of Philosophy Degree
September 25, 1992

Dissertation and Abstract Approved:

| | |
|---|---|
| Committee Chairperson | 25 Sept. 1992 Date |
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| Committee Member | 9/25/92 Date |
| Committee Member | 9/25/92 Date |
| Committee Member | 10/5/92 Date |

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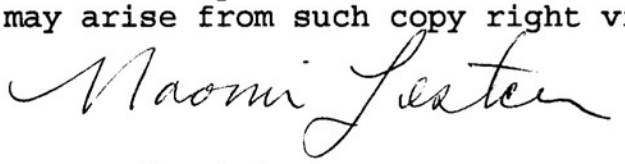

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ABSTRACT

Title of Dissertation: Coping Flexibility: Influencing Appraisals of Stress

Naomi Lester, Doctor of Philosophy, September 25, 1992

Dissertation directed by: Andrew Baum, Ph.D., Professor

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This dissertation examined the construct coping flexibility, exploring issues related to its measurement and correlates and testing two hypotheses about coping flexibility and stress. The first hypothesis evaluated the extent to which levels of coping flexibility predicted appraisals of a laboratory stressor. The second examined associations between coping flexibility and levels of chronic stress.

The study examined coping flexibility in a repeated measures design and was carried out in a controlled laboratory setting. Subjects were 27 men and 32 women. Coping flexibility was assessed using two relatively new instruments, the revised Flex card sort (original Flex: Schwartz & Daltroy, 1990, revised Flex, Lester et al, 1992) and a flexibility method using the Ways of Coping (WOC: Folkman & Lazarus, 1985; revised method: Lester et al,

1992). Subjects had their coping flexibility assessed, then completed a battery of cognitive tests and questionnaires. Subjects then completed a stressful Strrop task and were asked to appraise the task both before and after completing it.

Changes in heart rate, blood pressure and mood indicated that the Stroop was stressful, but results showed that levels of coping flexibility did not influence appraisals of this task. Results also indicated that there was no relationship between coping flexibility and chronic stress as measured in the study. Men appeared to be somewhat more flexible in some types of coping (e.g., avoidance) and no age differences were observed.

Discussion of these results focused on measurement issues and speculated on reasons for failure to confirm the study hypotheses. Much of this discussion focused on the idea that coping flexibility may not be a salient individual difference except during periods of significant stress. Future research in this area should measure coping flexibility during different levels of stress and may profit from the development of a structured interview assessment method.

# COPING FLEXIBILITY: INFLUENCING APPRAISALS OF STRESS

By

Naomi Lester

Dissertation submitted to
the Faculty of the Department of Medical
Psychology, Graduate Program of the Uniformed Services
University of the Health Sciences in partial fulfillment of
the requirement for the degree of
Doctor of Philosophy, September 25, 1992

## DEDICATION

This project is dedicated to two individuals without whom it would not have been possible, my husband Kevin Thomas and my father, Donald Lester. When I think of each of you the following phrase comes to mind: "When the skys are all gray, when the news is all bad, and when the chocolate's all gone... its good to know I still have friends like you".

ACKNOWLEDGMENTS

Many individuals helped to make this dissertation possible. I would like to thank the members of my committee Drs. Jerome Singer, David Krantz, Sheryle Gallant, James Rundell and Andrew Baum. I am especially grateful for the guidance and friendship of Andrew Baum. Throughout my time as a graduate student he has helped me to understand the intellectual, practical, and professional aspects of Health Psychology.

I would also like to thank several individuals who were instrumental in the dissertation project itself. Laura Smart who spent long hours running pilot subjects and who was always there to cheer me up, and Karin Helmers and Yavin Shaham who helped out with data and made sure I had some social contact while running the study.

It is friends and family who have kept me going during graduate school. To my husband Kevin Thomas, my father Donald Lester, my mother Hope Lockwood, my brother Jeff Lester, and my aunt and uncle, Nancy and Norman Gillespie, I extend a heart felt thanks and appreciation for the faith you had in me and my abilities. To my dear friends from USUHS Sarah Nesselhof Kendall, Mary O'Keeffe, Linda Nebel and Debra Popiel, I also say thanks, each of you has taught me so much and filled my time with joy.

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# INTRODUCTION

## Overview

This dissertation introduces the reader to the subject of coping flexibility and describes a study investigating this construct in relation to stress. In the introductory section, literature describing the stress process and its effects is reviewed as is past work examining coping as a mediator of stress. This discussion of coping research focuses on three areas: coping types and function, relationships between stress appraisals and coping, and measurement strategies. The construct of coping flexibility is then introduced and research examining this construct is reviewed. In addition, the possible relationship between coping flexibility and appraisals of stress is discussed. Measurement issues in the study of coping flexibility are raised and several relatively new measurement strategies introduced. The dissertation study hypotheses, procedures, and results are then described and discussed in detail, concluding with a general discussion of study findings and implications.

This dissertation explored the extent to which flexibility of coping predicted appraisals of stress induced in the laboratory and the relationship between flexibility and chronic life stress. The ways in which people cope with

the demands of life has been extensively studied. Much of this study has focused on how appraisals of stressful situations influence coping responses and the effectiveness of specific coping strategies for lessening the impact of specific stressful situations (Folkman, et al, 1986; Vitaliano, et al, 1990; Forsyth and Compas, 1987). However, past research on stress and coping has been criticized for not being sensitive enough to both the consistency of an individual's coping patterns and the variations in coping strategies used across situations (McCrae, 1984; Stone et al, 1991). Both the consistency in coping patterns across situations and the situation-specific use of particular coping strategies are important to a full understanding of the dynamics of the coping process. Individuals may maintain consistent patterns of coping but the use of specific coping strategies may be influenced by the parameters of the stressful situation (McCrae, 1984).

One way of examining both the situation specific use of coping strategies and the overall pattern of an individual's coping is to assess the flexibility with which one uses coping strategies. Previous research exploring flexibility in coping has found, in general, that more flexible coping is more effective at reducing stress than less flexible coping (for example, Gidden, 1988; Litman, et al, 1979; Hyer, 1984; Pearlin & Schooler, 1978). The past research in this area has not explored the reasons why flexible coping

may help to reduce stress.

Research has shown that the appraisal of stressful situations plays a fundamental role in the level of stress experienced by individuals. If one appraises a situation as benign or non stressful, fewer physiological and emotional effects of stress should be experienced (Folkman et al, 1986). Researchers who have studied flexibility in coping suggest that it may help mediate stress better than more rigid coping because it is more effective, matching specific demands and responses. Alternatively, flexibility may increase threshold for determining whether a situation is stressful and provide one with a sense of strength and efficacy that translates into more resilience and tendency to appraise situations as less stressful in general.

These past studies of coping flexibility have suggested that this coping pattern might be related to appraisals of stress. This dissertation project sought to specifically determine the extent to which coping flexibility would predict stress appraisals. It was hypothesized that flexibility in coping leads people to have greater confidence in their ability to cope with many situations. Knowing that one has many effective coping tools in one's coping repertoire may lead to a greater sense of general coping efficacy and decrease the individual's appraisal of situations as threatening.

As an extension of the idea that individuals who cope

more flexibly may appraise potentially stressful situations as being less threatening, the dissertation study also explored the possible association between lack of coping flexibility and chronic life stress. If, as past studies have suggested, having flexible coping helps mediate stress, individuals with less flexible coping may have higher levels of life stress.

## The Stress Process and its Effects

During the past century, the concept of stress has been defined and examined in many different ways. Early on, researchers identified patterns of physiological responses that took place after an organism was exposed to fear-inducing stimuli (Cannon and de la Paz, 1911). The substance "sympathin", later to be named epinephrine, was identified. This substance was excreted from the adrenal gland and was later found to be instrumental in the stress-induced "fight or flight" response (Cannon, 1929, 1931, 1935). Similarly, Selye (1936) accidentally discovered that injection of various hormonal extracts, and application of many other stimuli led to a triad of pathological responses, including enlargement of the adrenal gland, shrinkage of the thymus and the appearance of gastrointestinal ulcers. These effects were thought to result from a pattern of hyperresponsiveness of the adrenal cortex and secretion of corticosteriods.

Selye (1976) classified three stages in this General Adaptation Syndrome (GAS): alarm, resistance, and exhaustion. During the first stage, alarm, the organism comes into contact with the stressor. In the resistance stage the organism employs its various reserves and coping mechanisms. If an organism is not able to adapt to the stressor or if cycling between alarm and resistance stages becomes chronic, reserves may become depleted and the final stage, exhaustion, may be reached. If severe, exhaustion could lead to what Selye described as diseases of adaptation (e.g., cardiovascular disorders, kidney problems, peptic ulcers) or death.

Both Cannon and Selye were primarily concerned with stress as a physiological process: danger or pathogens threaten organisms and they respond in specific defensive ways. Other research, however, suggested that psychological variables were important to fully understand stress. Mason (1975) took issue with several of Selye's ideas and expanded the definition of stressors to include psychological stimuli as well as physiological stimuli. Mason found that the GAS responses were not, in fact, the same for all stressors but varied somewhat as a function of the type of stressor or how it was appraised. He also observed different patterns of adrenal secretion in response to different psychological variables such as conflict and uncertainty.

Parallel to this, Lazarus and colleagues were

developing the notion of stress as a psychological process rather than simply as the response of an organism to noxious stimuli (for example, Lazarus, 1966; Lazarus & Folkman, 1984). In more recent literature Gatchel, Baum and Krantz (1989) have defined stress as a process through which organisms respond to internal or external environmental events that are perceived as challenging or dangerous. These process-oriented definitions of stress emphasizes the importance of the ways in which environmental events are perceived and evaluated. Lazarus and Folkman (1984) describe this evaluation process -cognitive appraisal- as the mental activity of judging and seeking to process incoming information about a stressor and evaluate this information in reference to one's well being. This appraisal allows the individual to judge the significance of what is happening and determine if a given environmental event is dangerous or has the potential to cause harm. Research indicating that different appraisals lead to making different responses encouraged these investigators to focus on appraisals as a central component of the stress process (Lazarus and Folkman, 1984).

Lazarus and Folkman (1984) described three different types of appraisal. Primary appraisal is the initial judgement of a situation. At this point the person uses his/her cognitive resources to evaluate whether the situation is irrelevant and requires no action, whether it

is benign or positive, which may or may not require action, or if the situation is evaluated as stressful and thus requires action. Different types of reactions, including physiological changes, may occur when a given encounter is judged to be a stressful, i.e., a situation where harm or loss has been experienced, a threat situation where anticipated harm or loss is perceived, or a challenge situation where the potential for gain is apparent.

Secondary appraisal will be discussed more fully in the next section. Briefly, this type of appraisal is the evaluation of what can be done in a given situation once it has been interpreted as stressful. This is an evaluation of the possible coping options that are available to the individual and that might be effectively used for a desired outcome. Lazarus and Folkman (1984) suggest that a third kind of interpretation, reappraisal may take place whenever new information about the situation is presented. Though similar to primary and secondary appraisal, reappraisal occurs after the initial assessment of a situation has been made and does not have the time urgency of initial appraisal unless previous coping efforts have not been effective.

Even though current process-oriented definitions of stress have moved beyond emphasis on the effects of stress, these effects should not be overlooked and are, in fact, one of the primary reasons to study stress. Stress can have countless consequences, many of which are deleterious to

humans. These consequences can alter health both directly and indirectly. Stress involves increased secretion of catecholamines and corticosteriods which have wide-ranging effects including elevation of blood pressure and wear and tear on the body (Selye, 1976; Mason, 1975; Baum, Grunberg & Singer, 1982). Stress affects performance and alters health-related habits such as smoking and alcohol consumption (Schachter et al, 1977) . These effects may be observed both during the stressful event and as aftereffects once the event has ended (Hockey, 1974; Glass & Singer, 1972; McNamee et al, 1968). Many psychological effects of stress have also been documented. Stress and the perceived inability to exert control over one's environment can lead to feelings of helplessness, loss of motivation and emotional difficulties (Seligman, 1975; Baum et al, 1978, Rodin, 1976).

The effects of stress may be severe and difficulties may persist even after the stressful event has ended (Baum, O'Keeffe & Davidson, 1990). Fortunately with a greater understanding of the stress process has also come a greater appreciation of the ways in which people seek to cope with stress and minimize its effects. People cognitively appraise stressful situations as well as evaluate their own abilities to cope with them. These abilities to cope with stressors and minimize their effects have been shown to influence the outcomes of stressful experiences in many people.

## COPING AS A MEDIATOR OF STRESS

A primary mechanism for dealing with stress can be identified in the process-oriented definition of stress proposed by Lazarus and Folkman (1984). Following initial appraisal of an event as stressful, secondary appraisal takes place. This includes the evaluation of what can be done to remove or reduce the stressor and minimize stress as well as the evaluation of available coping options. The concept of coping is important to our understanding of how people appraise threatening situations and how they view their abilities to reduce the effects of stress. Coping may be defined as any process which arises as a result of an encounter with stressful stimuli and serves to minimize the adverse effects of those stimuli (Oken, 1987).

### Coping: Types and Functions

One could argue that there are as many different ways to cope as there are people experiencing stressful situations. Fortunately, theory and research have identified categories into which many coping strategies may be placed. Consideration of the function of particular coping options is important in these categorizations. Many researchers categorize coping within a framework of the tension-reduction model (White, 1974; Mechanic, 1974; Lazarus & Folkman, 1984). In the tension-reduction model, the primary function of coping is to reduce the tension or distress

caused by stress and to return the individual to a "pre-stress" equilibrium. Within this framework White (1974) suggested three functions for coping. First, coping helps the individual obtain information about the environment. Second, it helps the person maintain their ability to act to minimize the effects of the stressor and process information. Third, coping helps the individual to keep further coping options open. Other theorists have added such functions as bolstering motivation to meet demands and creating meaning from encounters to the list of the basic functions of coping (Mechanic, 1974; Pearlin & Schooler, 1978). By trying to cope with a stressful situation an individual may come to better understand the situation and how it fits into the larger context of experience. This may serve to minimize the impact of the situation and to motivate the individual to take further productive actions.

Lazarus and Folkman (1984) have created an alternative framework for categorizing types of coping and their functions. These researchers suggest two primary types of coping, problem-focused and emotion-focused. Problem-focused coping consists of strategies aimed at altering the source of the distress one is experiencing. Conversely, emotion-focused coping is directed at managing one's emotional responses to the stressful situation. Research suggests that both problem and emotion-focused coping strategies are used in most situations (Folkman & Lararus, 1980).

Other researchers have suggested additional taxonomies of coping strategies. These include attempts to increase supportive social interactions with others and coping strategies which help the individual avoid involvement with the stressor (Endler & Parker, 1990; Carver, et al., 1989). Obtaining support from others has functions similar to both problem and emotion-focused coping and could be viewed as containing elements of both. Contact with other people can provide both information and functional assistance that can help manage the source of the stress, and it can also provide moral encouragement and validation for an individual's feelings and reactions. In addition to these functions, social support can provide added benefit by buffering the person from the effects of additional stressors (Cohen & McKay, 1984). Furthermore, not having social support may actually cause stress. Thus, the seeking and maintaining of support can be viewed as a basic ongoing function of many coping strategies (Cohen & Syme, 1989).

Avoidance has also been suggested as a basic category of coping (Endler & Parker, 1990). Avoidance coping strategies also overlap with both problem and emotion-focused coping. For example, an individual might avoid a known stressful situation by seeking out other activities or by trying to avoid feelings of distress by diverting their attention to other emotion-involving situations such as watching television.

Implicit in this conceptualization of coping is that coping is helpful because it mediates the effects of stress. A large body of evidence from laboratory, field and clinic studies supports this theme.

Coping and Stress

Coping works to reduce stress and different types of coping appear to work better in different stressful situations. Laboratory studies have shown that stress-induced physiological arousal can be mediated through coping which focuses on problem solving approaches (Lazarus, Averill & Opton, 1970). In a series of laboratory studies Lazarus and his colleagues showed that by manipulating the sound tracks for a stress-inducing film, various types of coping could be elicited (Speisman et al, 1964; Lazarus & Alfert, 1964). The film depicted a set of primitive manhood rites. Three accompanying sound-tracks were designed. One provided a focus on the threat and trauma of the rites, a second described the pictured ordeal as harmless, and the third described the rites in an overly intellectualized way. The greatest stress response was seen to the film with the soundtrack focusing on trauma. Lesser reactions were seen for the soundtracks focusing on denial and on intellectualization.

These two sound tracks may have helped subjects focus their coping efforts and minimize the stress caused by the film (Speisman et al, 1964). Alternatively the soundtracks

focusing on denial or intellectualization may have altered the subjects appraisal of the stressful and threatening aspects of the film. Many similar laboratory studies followed (i.e., Lazarus, et al, 1965; Nomikos, et al, 1968). This series of studies demonstrated the powerful roles of appraisal and coping, and suggested that various types of coping such as denial or intellectualization could mediate stress in different situations.

Forsyth and Compas (1987) examined the extent to which the "goodness of fit" between appraisals of stressors and the use of coping strategies influenced levels of psychological symptoms. For major life events that were appraised as controllable individuals who used more problem-focused strategies had significantly fewer somatic symptoms than those who used less problem-focused coping. The situation was reversed for major life events where little control was possible: individuals using more problem-focused efforts reported greater numbers of symptoms than those using fewer of the problem oriented approaches. Results for emotion-focused coping showed the converse pattern with greater numbers of symptoms reported by those emphasizing this approach with controllable events. Fewer symptoms were reported by those emphasizing the emotional oriented approach in uncontrollable events.

In a similar study Compas, Malcarne and Fondacaro (1988) investigated the interactions between adolescent's

perceptions of the controllability of various situations and the use of problem or emotion-focused coping strategies. The young people who participated in the study were asked to rate the controllability of several stressful events and indicate how they coped with each. Students and parents were also asked to indicate any emotional or behavior problems being experienced. Results showed that those adolescents who used more problem-focused coping strategies to deal with stressors appraised as controllable had fewer emotional/behavioral problems than those students who used emotion-focused coping.

The importance of the congruence between appraisals of stress and successful coping attempts are also shown in studies by Patterson, et al, (1990) and Vitaliano, et al, (1990). Patterson and colleagues investigated the connections between appraisals and coping over time in a group of elderly persons. As part of a larger study on life-events and health in the elderly, individuals were interviewed in their homes every four months over the course of four years. These individuals were asked about how threatening and controllable they found various stressful events. They were also asked to indicate how they coped with these events. Results showed that when events were appraised as "amenable to change" more problem-focused coping was used. In addition, a positive correlation was seen between appraisals of the threatening aspects of stressful events

and various types of coping. As threat increased, these subjects tended to seek more social support and engage in less self-blame.

Vitaliano and colleagues carried out a study looking at stress appraisals and coping in several groups: people with psychiatric problems, work difficulties, family problems and physical health impairments. These researchers found that, for people with non-psychiatric problems, less depressed mood was experienced when problem-focused coping was used in a situation appraised as changeable. More depressed mood was experienced when problem-focused efforts were directed at situations appraised as not changeable. These correlations were not as strong for people with psychiatric problems. The authors speculated that individuals with psychiatric problems may not accurately appraise the changability of situations.

These studies underscore the importance of stressor appraisals in the focusing of coping efforts. The fit between the appraisal of stressors as changeable or controllable and the use of problem-focused coping seems to be particularly important. If appraisals of stress are important in the choice of successful coping strategies, one could argue that knowledge of one's own coping repertoire must play a role in this process. Rigid application of problem-focused coping across controllable and uncontrollable situations may prove to be unsuccessful and

may lead people to experience more distress or interpret situations as more threatening (Collins, et al, 1983). Knowledge and confidence in one's ability to draw flexibly from a wide range of available coping strategies might lead the individual to appraise potentially stressful situations as less threatening and more controllable.

Field research has focused on assessing how people cope with both daily hassles and major stressful events in their lives. Coping with annoyances and chronic stressors of daily life may be different than coping with major life events. Lazarus and Cohen (1977) have labeled these background stressors as daily hassles. While such low intensity problems may not cause as extreme a stress responses as more dramatic life events, they do appear lead to chronic cumulative effects over time. Because they are daily, chronic, and so embedded in an individual's life style, mitigation of the effects of these daily stressors may be difficult. Coping through palliative methods such as denial and the blocking out of stimuli may help chronically stressed individuals reduce the effects of these stressors (Baum et al, 1981).

Field research has also investigated coping with major life events. In a series of studies of people who lived near the failed nuclear power plant at Three Mile Island, Baum and colleagues found that several types of coping were used during the crisis (Collins, Baum & Singer, 1983). Those

individuals who reported greater use of reappraisal of the situation experienced fewer symptoms and less distress than those who persisted in problem-focused efforts. As with coping in many chronic situations, the use of denial was also less affective at reducing the stress these people experienced. This finding is consistent with the conclusions reached by Mullen and Suls (1982). After examining many studies of coping these researchers found that denial is less effective for coping in chronic stress situations, but can be useful in acute situations. Using denial as a way to cope with stress may help minimize the effects of arousal or it may impede other important coping efforts. Several studies have shown that when one is confronted with a severe stressor such as the diagnosis of a serious illness, the early use of denial may help to give an individual necessary time and distance from the trauma (Lazarus, 1985). This distancing allows the person to gradually adjust and come to understand this major stress. In a study of post-myocardial infarction patients, Hackett, Cassem and Wishnie, (1968) found that those patients who denied the severity of their condition experienced less depression and anxiety than those who pondered what had happened to them.

Wolff and colleagues (Wolff, et al, 1964) also found that parents of children with leukemia successfully used denial as a means of coping. Those parents who used more denial showed lower corticosteroid levels. Denying the

seriousness of their child's illness may have helped these parents minimize the arousal associated with this extremely stressful period. However, this use of denial led to poorer adjustment after the child's death; those parents who had used denial before the child's death exhibited higher corticosteroid levels for many months after the death of the child (Hofer, et al, 1972a, 1972b). These researchers speculated that use of denial during the child's illness had led parents to poorly prepare themselves for the child's death and that after the death they entered a protracted period of mourning. Those parents who did not use denial may have already started the mourning process while the child was still alive and may have been more prepared for the child's death. Using denial was effective as a short-term means of handling a painful situation but it's continued use in the face of the reality of the child's death was not possible.

These findings are similar to results observed by Janis (1958), working with surgery patients. Those patients who received information about what to expect during the postoperative period, before their surgery took place had fewer complications after their operations. Patients who did not know what to expect experienced greater distress, and in some cases recovered more slowly. These studies also further emphasized the differential effectiveness of various coping mechanisms (denial versus information seeking) when used in

specific situations.

The teaching of specific coping strategies has often been used in clinical settings in an attempt to assist patients with recovery from a wide range of physical and emotional difficulties. In a major review of the implications of stress coping for treatment, Matheney and colleagues (1986) investigated various coping interventions and outcome variables. Instruction in coping was examined as a treatment regime. The study evaluated records of many types of coping interventions. A meta-analysis for treatment effect size showed that cognitive restructuring, relaxation training and social skills training were the most effective stress-reduction strategies. Outcome measures varied widely (277 different measures in the 35 studies reviewed). The most common index of outcome assessed was anxiety. Standardized tests were used in roughly one-third of the studies with some type of behavioral outcome being used in only one-quarter of the studies.

The Matheny, et al. meta-analysis falls short of specifying which types of coping would work best for individuals in various situations. It does suggest, however that a combination of strategies leads to the best stress reduction. Cognitive restructuring and relaxation training can be viewed from both a problem focused and emotion-focused standpoint. Cognitive restructuring may teach people to reappraise stress and lead them to behave in more

adaptive and healthier ways. This restructuring may also serve to help them adjust their emotional reactions as well. Relaxation training, while a tool for adjusting an individual's internal state, may also serve to provide a concrete action to help mitigate the effects of stress. Learning and using relaxation techniques gives the patient a greater sense of control over their stress and may help boost their general sense of efficacy.

This brief review of the general stress and coping literature suggests that appraisal plays a vital role in the coping process. Research shows that the appraisal of stressors influences the types of coping that are used and the success of various coping strategies. This dissertation sought to address the coping appraisal question from a different standpoint. Does a style of coping, flexibility, affect appraisals of stressors? Having a wide variety of coping strategies readily available for flexible use in a wide range of situations may lead the individual to see potentially stressful situations in a different light. Knowing that he or she has a variety of coping strategies ready to use may lead the individual to see potentially stressful situations as less threatening or more controllable.

Before introducing the construct of coping flexibility and its measurement, the ways in which coping has been measured in the past will be briefly reviewed.

Measuring Coping

Early conceptions of coping focused on people's use of ego defense mechanisms. Defense mechanisms are "those means of coping which are largely determined by unconscious forces" (Kaplan & Sadock, 1988, p.313). These defenses are defined as adaptive or nonadaptive as a function of the consequences of their use. The assessment of ego defenses usually involves a clinical interview, and defenses are assessed on a continuum of development. Mature defenses would be judged to be more adaptive than immature defenses (Vaillant, 1977). While this approach does provide some clinically useful information, difficulties with it arise. The unconscious determinants of defenses are difficult to pin down and inter-interviewer reliability may be low. The determination of defenses is also somewhat circular in that, various defenses are defined only by their consequences.

Coping has also been viewed as related to various personality traits. Trait approaches are similar to ego defense approaches in their assumption that people remain consistent in their reactions to stress over many situations (Folkman & Lazarus, 1980). Holahan and Moos used this approach in developing the Coping Strategies Index (1987). Basic personality parameters such as being self-confident and easygoing are measured along with various coping strategies. Other researchers and theorists have suggested that an individual's coping efforts are highly influenced by

the personality components of anxiety and avoidance (Spielberger, 1972). Another trait approach has been developed by Kobasa and colleagues (Kobasa et al, 1983). Individuals who score high on a "hardiness" trait were found to have less work-related stress and better health than those who scored low on this trait. Kobasa describes hardiness as a trait composed of high levels of commitment and perceived control. Hardy people also appear to appraise more situations as challenging rather than threatening. These trait approaches assume that individual's scores on a given coping parameter will remain fairly consistent over different types of stressful situations. This may not be the case, as people may react to situations differently and use different coping strategies in these situations. Unfortunately the trait approach tends to minimizes the richness of possible coping strategies and may not account for the fact that different coping strategies may be used in different situations. Strategies used for coping with a problem in the environment may be very different than strategies used to cope with one's own physical pain or one's reactions to trauma.

Research on coping still uses many different conceptualizations of coping and a review of the coping assessment literature reveals many different instruments and coping measurement strategies. Interviews are still used, as well as open-ended self-statements approaches (Larsson,

1984). Because of their ease of administration and standardization, most current assessment are done using standardized paper and pencil questionnaires (e.g., Ways of Coping Checklist, Folkman & Lazarus, 1980; Coping Strategies Inventory, Billings & Moos, 1981; Multidimensional Coping Inventory, Endler & Parker, 1990; COPE, Carver, Scheier & Weintraub, 1989). These scales are used in both the field and laboratory, often with revisions or additions to serve particular purposes or study foci. While these scales differ in their specific focus they share an emphasis on measuring sub-components or factors within the coping construct.

The most widely used of these scales, the Ways of Coping Checklist (WOC) (Folkman & Lazarus, 1980) breaks coping down into several major components. Direct action or problem-focused coping strategies are attempts by the individual to change his or her relationship to the stressful situation. Questionnaire items that evaluate problem-focused coping assess "problem-solving efforts and behavioral strategies for altering or managing the source of the problem" (Folkman & Lazarus, 1980, p.224). Items that evaluate palliative or emotion-focused coping assess "cognitive and behavioral efforts directed at reducing or managing emotional distress" (Folkman & Lazarus, 1980, p.225).

Revisions and re-factoring of this checklist have led to the development of scales assessing the use of

information gathering as a coping strategy. Obtaining information about a stressor and an expected response may aid in the reduction of stress. Added information reduces uncertainty and may help the individual avoid future problems (Baum, Singer & Baum, 1981). Subscales assessing the use of wishful thinking, seeking social support, avoidance and self-blame have also been derived from the WOC (Vitaliano et al., 1985).

The paper and pencil questionnaire approach has both positive and negative aspects. Questionnaires are inexpensive and easy to administer and evaluate. This has led to much wider study of coping in situations where an interview evaluation would not be possible. Typically these assessment measures have formulated descriptive lists of coping methods or types of coping foci (e.g. problem and emotion-focused), often generated by asking people how they cope with general sources of stress (Billings and Moos, 1981).

Some of the paper and pencil scales place different emphasis on the components of the basic problem oriented versus emotion oriented distinction. The Coping Strategies Inventory (Holahan and Moos, 1987) stratifies coping efforts focused on the source of the problem into active-cognitive strategies such as, "I drew on my past experience" and active-behavioral strategies such as, "I made a plan of action and followed it". The items addressing emotional or

more self-regulatory efforts are classified as avoidance strategies, for example, "I tried to reduce tension by smoking more". The CSI also measures the personality components of self-confidence and easygoing disposition.

The COPE (Carver, Scheier and Weintraub, 1989) attempts to expand the measurement of problem and emotion focused efforts to include thirteen distinctive theoretically driven components. The components of the COPE that are more problem-focused include: taking direct action against a stressor, planning or thinking about how to handle the stressor, suppression of competing activities and decreasing distractions from other activities, and restraint coping, which involves waiting until action is most suited to resolving the stressful situation. More emotionally-focused components include subscales addressing social support, venting of emotions, reducing emotional involvement, positive reinterpretation, denial/acceptance and turning to religion are included.

Developed just one year after the COPE, the Multidimensional Assessment of Coping (MCI) (Endler and Parker, 1990) conceptualizes problem-focused coping as being task-oriented and emotion-focused as being person oriented. The MCI consists of 44 items that can be factored into three subscales: task-oriented, emotion-oriented and avoidance-oriented. The MCI suggests that avoidance strategies can be either person or task oriented and should, therefore stand

on their own as a separate coping focus. Endler and Parker suggest that the MCI is particularly suited for measuring coping in depressed individuals. These researchers found that scores on the emotion-oriented scale were positively correlated with depression and task-oriented scores negatively correlated with depression.

Difficulties with current measurement tools. Each of these paper and pencil questionnaires has been factor analyzed and psychometrically tested. Essentially, each measures similar coping parameters with different numbers of coping strategy descriptives in each subscale. All of these instruments have been criticized for having some subscales with too few items and for having items that don't apply to many of the people filling out the scales (Endler & Parker, 1990; Stone et al., 1991). This type of questionnaire approach does not take into account the context in which people do their coping and fails to assess cross-situational differences in coping. McCrae (1984) found that when individuals describe recent life events differentially categorized as involving a loss, a threat, or a challenge they repored using fundamentally different coping methods. When the situation involved a loss, faith, fatalism and expressing feelings were the most often used coping strategies. When the situation involved a threat, wishful thinking, faith and fatalism were used most often. For challenge situations a wider variety of strategies,

including rational action, positive thinking and denial were used. McCrae's work emphasized the importance of the ways in which stressors are appraised and how these appraisals may alter the ways in which individuals cope.

In addition to difficulties measuring coping in different situations, these measures fail to address the role that coping resources and the extent to which self reported indices of coping actually reflect coping behavior. What an individual says they are going to do when faced with a given situation may differ from what they would actually do in that situation (Fishbein & Ajzen, 1975; Norman, 1975). An individuals attitudes about his or herself and the world around them may influence how they respond to questionnaire on coping. For example, if an individual places great emphasis on personal responsibility and instrumental action, and is then asked to cope with a situation were little control is possible, would they overemphasize problem-focused coping or self blame approaches rather than say they would adopt a more emotion-focused. Which of these coping approaches would they actually use if the researcher could actually record their behavior? In addition, coping inventories are completed with the assumption that the resources to engage in various coping methods are available. In the reality of the individuals life this may not be the case. For example, a coping inventory may list "seek professional assistance" as a method for coping with a

problem. A respondent may indicate that they would hypothetically use this coping method. In the reality of the resources the individual has thought, this coping option may not be available. The individual may not have proper insurance coverage, may lack family support for such an option or may simply not be able to find transportation to get them to the place they could "seek professional assistance". Coping inventories may be filled out in the respondent mind as if they were in "the best of all possible worlds" and indications of how individuals would actually cope in various situations probably only partially reflects how they would actually cope.

Even though paper and pencil coping instruments do not accurately reflect the actually process of coping relative to the individual coper they do yield information about cope individuals deal with stressful events. When testing a numbers of individuals patterns and clusters of different types of coping do emerge (Folkman & Lazarus, 1980). These patterns, or emphasis on various types of coping emerge time after time in different populations of people. In addition, the use of paper and pencil measures as increases the breadth of coping research by making it more cost effective and available to researchers who are not able to carry out interviews or behavioral observations.

Each of the currently used paper and pencil coping assessments is open to the criticisms discussed above yet,

has some strength and is currently being used in research. None of these currently used measures is able to assess coping across-situation unless they are administered longitudinally. If, as many have hypothesized, the use of various coping strategies changes under different stressful demands coping should be assessed taking into account different situational demands. A coping strategy used in one situation may not be used as much in another. The "static" paper and pencil indexes of coping may miss measuring patterns in an individual's ways of coping. These measures also fail to address the extent to which people rely to greater or lesser extent on a particular coping strategy in different situations. Assessing coping flexibility, or the variation in use of particular coping strategies in different situations attempts to index the process of coping to a greater extent than single situation assessment of coping. Flexibility in the use of individual's coping tools is not assessed by an inventory used only one time in reference to a particular stressor or to stress "in general". As we will see, the flexibility with which one uses his or her coping strategies is an important component of the coping process and may affect how one appraises stressful situations.

As suggested above, coping assessments have been criticized for not being sensitive to the individual's use of different coping strategies in different situations. One way of addressing this is to examine the extent of flexibility in an individual's coping across different situations. This is to say that the specific coping strategies used by each individual in each situation are not emphasized, but rather, an individual's propensity toward the use of a wider variety of specifically targeted coping strategies over many situations (flexibility), versus the more restrictive use of fewer strategies in a variety of different situations is addressed. This allows for consideration of the person by situation interaction while still maintaining testable individual differences in the ways in which people cope.

The flexible use of various coping strategies across many situations may prove to be a more adaptive pattern for minimizing the effects of stress. Knowing that one has a set of coping strategies that can be used as a situation warrants may lead one to appraise potentially stressful situations as less threatening. If this is the case, helping people to develop greater coping flexibility may help them reduce stress and see potential stressors in a more positive light. This highly adaptive, flexible way of coping lets the individual apply coping strategies as a situation warrants.

However, there may be a less adaptive form of coping that looks like flexible coping, but is actually random coping. The random application of coping strategies to situations may not be an adaptive way to cope. The systematic, rigid use of coping strategies over many situations may also prove to be a less adaptive way of handling stress. Once the flexibility construct is more fully understood, it may be useful as a predictor of individual's appraisals of stress. While not extensive, some evidence supports this idea.

Early in the development of coping research Lazarus and Folkman highlighted the importance of flexibility in coping by indicating that this coping dimension was related to both coping effectiveness and function. (Lazarus & Folkman, 1984). They further suggested that flexibility in coping responses helps make psychological growth possible. A stagnant coping pattern implies rigidity and lack of individual growth. Through trial and error people find out which coping strategies work for them in various situations. When a given strategy is found to work well it is added to the coping repertoire. A greater number of available coping options would lead to a greater choice of adaptational tools to use in coping with stressors as they arise and might influence initial stress appraisal (Lazarus & Launier, 1978, p.309). Additionally Forsyth and Compas suggest that stress appraisals "may be the result of efforts to cope with a stressful event rather than factors that shape coping

behavior" (1987, p. 484). Over time one learns to handle stressors of many types and these researchers suggest that the effectiveness of past coping efforts may influence the degree to which a new stressor is viewed as threatening or controllable.

While the extent of flexibility in coping used by individuals has not been extensively studied, there is a small literature in this area. This literature may be divided into two areas: the description and evaluation of flexibility and rigidity from a cognitive point of view and flexibility and rigidity of coping and its effects in specific populations.

Coping Flexibility: Cognitive Evidence

Offer (1973) suggested that healthier individuals possess a larger number of coping techniques. This better enables them to meet life's challenges. He further postulated that the possession of a greater array of available coping mechanisms leads a person to deal flexibly with both internal and external events. This concept of flexibility arose from studies of the risk factors for suicide in college students. The lack of flexibility both in ways of coping with problems and a "general cognitive rigidity" or inability to think of situations in more than one way, have been found to be predictive of greater suicide vulnerability (Bonner & Rich, 1988). Gidden (1988) suggested

that the development of coping flexibility is very important in the attainment of healthy personality in young adults. Gidden's research focused on developmental changes during the college years. He summarized findings from three studies carried out at Stanford, Berkeley and Harvard. These studies followed students from their college entrance through graduation. Through extensive interviews with students, these studies found a gradual increase in the flexibility with which students faced academic difficulties, personal problems and relationships with their families. This increase in flexibility was also associated with increases in self-esteem and personal stability in young adults.

Bonner & Rich (1988) conducted a similar study with college students. Using a variety of paper and pencil questionnaires measuring social/emotional alienation, cognitive rigidity and deficient adaptive resources (coping), these researchers were able to predict suicidal ideation during stressful midterm exams. The combination of social alienation and irrational cognitions, including poor coping skills, combined with the stress of exam time to predict 25% of the variance in suicidal ideation scores for these college undergraduates. These researchers suggest that poor coping skills contribute to a stress-vulnerability model for predicting suicidal ideation.

Coping Flexibility in Specific Populations

Coping rigidity may also be a risk factor for drug and

alcohol relapse. Considerable research has shown that poor ability to cope with stress after withdrawal from substances of abuse is highly correlated with risk of relapse (see Marlatt & Gordon, 1985). Litman and colleagues (1977, 1979) suggested that an important component of coping with stress after withdrawal is flexibility. In one of their studies, the Litman group conducted interviews and administered questionnaires to assess the coping strategies of 120 alcoholics who had been hospitalized. The alcoholics were split into 2 groups: relapsers - those who had resumed drinking and, survivors - those who had maintained abstinence for at lease six months. Results showed that the survivors adopted a "multiplicity of coping styles" or a flexible coping pattern. These researchers go on to state that "if individuals are observed over time, an increase in the number of types of coping behavior will be a predictor of survival", (Litman, et al, 1974, p.94).

In a follow-up study, Litman described situations which are particularly risky for recovering alcoholics and the success of coping with these situations. Situations involving social anxiety and unpleasant mood put the alcoholic in the most danger for relapse. The flexible use of a variety of methods for coping (such as avoidance and positive thinking) was the most helpful in overcoming these stressful situations. In a somewhat similar study done on non-alcoholics, the consistency of coping with several

academic and social situations was examined by Compas, Forsythe and Wagner (1988). Students were asked to indicate how they coped with a set of chronic daily stressors. These researchers found a positive correlation between the consistent, repeated use of several coping strategies and negative emotions. They hypothesized that a rigid coping style could predispose an individual to negative emotions, or, conversely, that emotional distress might lead to a decrease in the flexibility with which coping mechanisms are used.

In the burgeoning field of geriatric psychology much is being learned about the role of coping in the well-being of elderly. In summarizing his years of clinical work with the aged, Brink (1978) characterized some seniors' coping as more rigid than that seen in younger adults. He further explained that this rigid coping is correlated with poor adjustment. Hyer and associates presented a more optimistic review of the literature in this area. Hyer, et al (1984) explored coping rigidity and defensiveness in the elderly. They suggested that past conclusions about coping in the elderly are not accurate. Much of the research showing coping rigidity in the aged has been based on assessment of coping with specific difficulties in specific situations. According to Hyer, et al, this approach has failed to capture the fluidity with which seniors actually adapt to many varied situations. Past research (such as Brink, 1978)

has tested the few rigid and defensive copers who failed to successfully adapt rather than focus on the majority of elderly who cope flexibly and adapt very well. More work needs to be done in this area. If coping flexibility is correlated with better adaptation in the aged, elderly people who are having difficulty might be encouraged to try new ways of coping.

Severe stress is often seen in families with a chronically ill or handicapped child. After working with many of these families, Shapiro (1986) suggested that those families who used a flexible and broad range of coping strategies experienced better outcomes than those who stuck to rigid methods of coping. In Shapiro's study outcome was measured by assessing depression among family members. Shapiro described well-adjusted families as those who flexibly used humor, communication and normalizing strategies. In a similar review of clinical experience Sargent & Lieberman (1985) indicated that rigidly seeking to maintain previous restrictive family coping strategies may make the whole family more vulnerable to depression and other illness when a child is disabled.

Additionally, clinical evidence from adults with chronic illness suggests that flexible coping styles are more adaptive than rigid ones. In reviewing this literature Ell (1986) found that coping patterns that rely flexibly on both problem solving and palliative efforts are more helpful

in reducing the stress of a chronic disease. Fenton, Revenson and Hinrichsen (1984) examined the use of both cognitive and emotional coping strategies in chronically ill adults. These researchers found that while no single coping strategy was better than any other, the use of greater numbers of different coping devices across many situations did reduce stress and lead to better adjustment to the chronic illness.

The literature describing flexibility and rigidity of coping patterns indicates that young adults, alcoholics trying to maintain abstinence, the elderly, the chronically ill and families under stress all show effects related to flexibility. The predictive value of this construct was explored by Pearlin and Schooler (1978), who conducted the first large scale population study of the ways in which people cope with difficulties in several areas of their lives. Their study involved assessment of 2300 people, 18 to 65 years old, living and working in the Chicago area. Interviews explored the ways in which people coped with problems in the areas of marriage, parenting, household structure, financial matters and occupation. Pearlin and Schooler found that no single coping mechanism was effective at reducing stress in each of the five problem areas, concluding that "having a particular weapon (coping strategy) in one's arsenal is less important than having a variety of weapons", and that "the single coping response,

regardless of its efficacy may be less effective than bringing to bear a range of responses to life-strains", (Pearlin and Schooler, 1978, p. 13). Their data indicated that, as the number of coping strategies endorsed for any given life area increased, reported stress in that area decreased.

Lykes (1983) explored flexibility in coping style from another standpoint by studying racial discrimination in the lives of black women. Oral histories of 71 black women were gathered by trained interviewers. Tapes of these interviews (average 5 hours each) were blindly coded for basic demographics, employment history, interviewee's life problems (ie. discrimination), sense of control over problems and coping strategies used. Coping strategies were further coded for instrumentality (actions taken) and flexibility. Flexibility was operationalized as the number of coping strategies used by the individual across all life problems they described. Lykes found that these black women varied in the degree of flexibility with which they used various methods for coping (number of varied coping strategies used in situations described). Greater flexibility was particularly important when dealing with life problems, especially those centered around discrimination. Coping flexibility was found to be positively correlated with these women's perceptions of personal control. The greater the perceived control the

greater the flexibility in coping strategies used.

Assessment limitations. There are clear assessment limitations in the flexibility of coping literature just described. In most of the studies reviewed, coping flexibility was assessed by counting the number of coping strategies used in a given situation. This approach has serious drawbacks. Simply counting the number of coping strategies used in a particular situation is insufficient to assess flexibility. Counting coping strategies could be confounded by several factors such as the tendency of some individuals to endorse greater numbers of items on questionnaires in general, variation in memory, or by differential verbal abilities. Use of the number of coping strategies endorsed as an index of flexibility fails to address the actual process of flexibility. There is no guarantee that individuals use coping strategies differentially, only that more are used and random hit-or-miss coping would appear to be flexibility. These limitations are also compounded by the problems with general coping measurement that were discussed earlier. Most methods for measuring flexibility in coping only index the surface aspects of coping at a given time. Counting the number of coping strategies used in coping with a given situation fails to address the dynamics of using different coping strategies to cope with different situations.

New Ways to Measure Coping Flexibility

Examination of the relationships between coping flexibility and the appraisal of stress has been aided by the development of new ways of measuring this dimension of coping. Previous research carried out by Schwartz and Daltroy (1991) and work in our laboratory has developed a card sorting measure and a paper and pencil questionnaire method for assessing coping flexibility.

The Flex card sort - work of Schwatrz & Daltroy.

1. Description of measure. The Flex card sorting instrument was initially developed by Schwartz and Daltroy to assess coping patterns in individuals with chronic pain (1991). To complete the Schwartz & Daltroy measure, subjects are asked to indicate how they would cope with particular situations by placing cards containing descriptions of coping strategies into a board with columns indicating categories from "most like me" to "least like me". Subjects sort the cards in reference to several different stressful situations. The flexibility in each individual's coping is determined by calculating the range of movement of each card between the categories on the board.

The original Flex consists of a set of 20 cards describing various ways in which people with chronic pain cope (for example, "I keep busy", "I call a friend", and "I tell myself tomorrow will be different: this too shall pass"). Subjects are asked to think about, and then describe

a problem in each of six distinct areas: work, self-image/confidence, family, recreation/sports, physical health, and activities of daily living. Subjects are then instructed to place the card on a seven column board. The columns indicate how much like or unlike the individual a given coping response is (see Figure 1). The columns are labeled as follows: Most Unlike Me (-3), A Little More Like Unlike Me (-2), A Little Unlike Me (-1), Neither Like Me Nor Unlike Me (0), A Little Like Me (+1), A Little More Like Me (+2), Most Like Me (+3). This gives a range of possible scores for each card from -3 to +3. The individual does a separate card sort for how they would cope with each of the life problems they identify.

According to Schwartz and Daltroy, a flexible coper will change the position of the coping response cards to a greater extent over the six situations than an inflexible coper. To score the Flex the amount of change in the position of the cards over the various scenarios is calculated. For example, say card one ("I try to accept my limits") had a score of +1 (A Little Like Me) for the problem described in the area of work. A +2 (A Little More Like Me) for the problem described in the self-image/confidence area, a 0 (Neither Like Me Nor Unlike Me) for the family area, +1 for the recreation/sports area, 0 for physical health area and +2 for the activities of daily life problem. This would give scores for card one of +1, +2,

0, +1, 0, and +2 for the six sorts. The range in these scores is then obtained by finding the absolute value of the highest score minus the lowest score. The range score for this card, would then be 2 (the absolute value of +2 minus 0), indicating the individual felt that they varied their use of the coping strategy "I try to accept my limits" an average of two columns on the board. The range score for each of the 20 cards is calculated and then a grand mean range is derived. This mean range for the 20 cards is the flexibility score for the subject. A given flexibility score indicates the average number of columns the cards moved over the various sorting scenarios. For example, a flexibility score of 2.95 would indicate that the subject changed coping responses an average of three columns over the course of the six scenarios. This would mean that if say, a given card had started out in the "A Little More Like Me Column"(+2) it would have, on average moved to the "A Little Unlike Me" (-1) column (examples from Schwartz & Daltroy, 1991). In their testing, Schwartz and Daltroy (personal communication) report flexibility scores varying from .5 to 3.5 on their 7-point scale.

2. Research findings. In their study of chronic pain patients, Schwartz and Daltroy found that flexibility in coping as measured by the Flex card sort was associated with self-efficacy. These researchers found that as the level of coping flexibility increased the importance of self-efficacy

in solving functional problems associate with chronic pain decreased (Schwartz & Daltroy, 1991). In addition, in the specific population examined, there was an interaction between flexibility and depressed mood. Schwartz (personal communication, 1991) has speculated that this relationship may be due to an unreliable or random type of coping flexibility that is partially caused by depressed mood.

In this study, flexibility scores were not associated with general or health locus of control and there was no relationship between helplessness and flexibility. Scores on the Flex were correlated with scores on the Ways of Coping Checklist. The fewer items endorsed for the WOC, the lower the flexibility score indicated by the Flex.

The revised Flex card sort - work from our laboratory. Recent work carried out in our laboratory has revised the Flex for use in the general population (Lester, Smart & Baum, 1992).

1. Description of Measure. The Flex was developed for use with a pain/loss population, because of this, the instrument needed to be modified somewhat for use in the general population. Several of the coping strategies cards describing coping efforts unique to chronic pain patients, were changed. For example, a card which indicated "I talk to my doctor" was changed to "I talk to my family ". Please see Table 1 for a complete list of the coping strategies listen on the sorting cards.

The sorting scenarios for the Flex were also changed. Four new scenarios were developed. The scenarios describe situations that most people have either found themselves in or can easily picture themselves as being in. In the revised version of the Flex every subject carries out a card sort for how they would cope with two social situations, having an argument with a friend and having a friend move away, and two less-social situations, being stuck in traffic and having to move and start of a new job or academic program. The scenarios were developed so that there would be a higher and lower magnitude stressor for both social and less-social situations. The higher magnitude social situation was having a friend move away, and for the less-social situation, having to move to a new city. The lower magnitude scenario for social situation was having an argument with a friend, for less-social situation, being stuck in traffic. Subjects complete the card sort while thinking about how they would cope with the stressful experiences. See appendix 1 for scenario descriptions. The flex scoring method using ranges was kept the same as in the Schwartz and Daltroy work.

2. Research findings. A recent study in our laboratory assessed the relationships between coping flexibility as measured by the revised Flex card sort and constructs thought to relate to it (Lester, Smart & Baum, 1992). The study was designed to gather information relating to the construct validity of the revised Flex and to investigate

age and gender differences in coping flexibility as assesses by this new measure.

For this study, 28 men and 32 women (18 to 66 years of age) completed the revised Flex card sort along with the Ways of Coping Inventory (WOC: Folkman & Lazarus, 1985). The specific use of the WOC in this study will be discussed shortly. Participants were also asked to complete an appraisal questionnaire in reference to each of the stressful scenarios used in the revised Flex. Further questionnaires assessed individuals style of impression management (self-monitoring and social desirability) and basic personality variables from the Multidimensional Personality Questionnaire (Tellegen, 1982).

Results of this study indicated that while men and women did not greatly differ in terms of coping flexibility, age was related to this construct. Older individuals were found to be less flexible than younger participants.

In this study coping flexibility as measured by the revised Flex card sort was somewhat related to individuals ability to monitor their own behavior in reference the those around them as assessed by the Self Monitoring Scale (Snyder, 1974). Individuals who are high self-monitors actively alter their behavior with reference to the behavior of others. This behavioral adaptability indicates greater general flexibility in the range of behaviors exhibited by the individual. Scores on the Self-Monitoring Scale

correlated positively with coping flexibility scores for the revised Flex ($r$ = .21, $p$ < .057). Coping flexibility was negatively related to susceptibility to social desirability pressures as measured by the Crowne-Marlow Social Desirability Scale, $r$ = -.30, $p$ < .01. (Crowne & Marlow, 1964).

Results for the Multidimensional Personality Questionnaire (MPQ) indicated that individuals who coped more flexibly had higher levels of wellbeing and achievement. Greater flexibility was also associated with lower levels on the stress reaction and the alienation scales (see Table 2).

This study also investigated the factor structure for the revised Flex. This is complex because a factor structure for each scenario used in the Flex must be established. Because each situation described in the coping scenarios is different, people may use different patterns of coping strategies in dealing with these various stressors. A description of these factors obtained from the Lester et al study are listed in Table 3. While none of the factors appear to be particularly strong, the factors that emerge for the scenario describing a friend leaving seem to be the most robust, with Chronbach's Alphas ranging from .65 on a factor describing "accepting one's limits", to .67 on a factor describing "social support". Factors describing coping through social support emerge within each of the

scenarios. It does appear that the revised Flex yields several weak factors. This is partially to be expected because of the changing nature of the dynamic construct being assessed. Correlations between these Flex factors and WOC subscale scores are described in table 4.

The Lester et al study attempted to determine the discriminant validity for the revised Flex by comparing coping flexibility as assessed by the Flex and that assessed by another coping inventory. A new procedure for the WOC was developed for this purpose.

WOC flexibility - work in our laboratory.

1. Description of measure. In the Lester at al study subjects were asked to complete a WOC in reference to how they would cope with each of the situations described by the coping scenarios used in the revised Flex. The WOC contained 42 statements describing coping strategies. The subjects rated the extent to which they used each strategy on a 4-point scale ranging from never use to frequently use. The WOC was scored such that a number (on the 4-point scale) indicating the extent to which each coping strategy was used in each scenario situation was obtained. The range in the extent of use of each coping strategy was then calculated over the four coping scenarios. An overall flexibility score was obtained and using the Vitaliano et al (1985) subscale procedures flexibility in problem-focused, social support, wishful thinking, blame, and avoidance coping approaches was

also determined.

2. Research findings. The Lester et al study found that correlations between the coping flexibility range scores on the Flex and the range scores obtained from the WOC were significant. With the correlation for Flex range and WOC overall range being, $r = .51$, $p < .001$, for WOC problem-focused coping range being, $r = .36$, $p < .002$, for social support range, $r = .39$, $p < .001$, for wishful thinking range, $r = .40$, $p < .001$, for blame range, $r = .31$, $p < .008$, and for the avoidance subscale range, $r = .38$, $p < .001$. These correlations added strength to the assertion that the Flex was measuring flexibility in coping and indicated that the WOC could be used in this new way.

In this study the flexibility as measured by the WOC method was also compared with age, gender and the self monitoring, social desirability and personality variables. Few gender differences were observed but men appeared to be slightly more flexible in their use of wishful thinking and social support. Older individuals were less flexible in their use of problem-focused and more flexible in their use of blame focused coping strategies. Higher levels of flexibility for both the overall WOC and each of the subscale scores were related to greater levels of self monitoring ($rs = .21 - .41$, $p < .05$). The MPQ social closeness scale was related with overall WOC flexibility, ($r = -.28$, $p < .02$) as well as flexibility on the problem-

focused ($r$ = -.22, $p$ < .05), and blame-focused scales (r = .21, $p$ > .05).

Conclusions from previous studies in our laboratory. Results from our previous studies using the revised Flex card sort and the WOC suggested that these two new assessment instruments would be useful in further study of coping flexibility. Information obtained in the Lester et al study indicated that these instruments could prove useful in measuring coping but that further work with these coping assessments should include additional information related to construct validity. The very nature of coping flexibility makes it difficult to measure. The Flex and WOC are by no means the ideal ways to measure coping flexibility but they does add to the choices of current measurement instruments available in this complex area.

While the use of these measures is still preliminary, they do appear to hold promise for the measurement of coping flexibility. They do not simply measure the number of coping mechanisms used by an individual in a specific situation, but assess the dynamics of the coping process as it changes over situations. They also help to address problems seen in more well-established measures of coping. As discussed earlier, an individual may not always cope the same way with situations time after time. Many of the often-used paper and pencil coping inventories assess the ways people cope at one time point and in reference to only one

stressor or to stress in general. By assessing coping in different situations, the Flex card sort and the new WOC flexibility assessment method look at patterns of coping and investigate how these change with the changing parameters of different stressful situations.

Flexible Coping and Stress Appraisals

Even with the many limitations seen in past studies of coping flexibility, this literature has several compelling implications. If flexible copers are able to handle stress better, why is this so? One possible answer to this question is that more flexible copers actually appraise stressful situations differently than less flexible copers. Having a greater number of coping strategies at one's disposal for use in a wide variety of situations may predispose flexible copers to see potentially stressful situations in a fundamentally different way than individuals with fewer and more rigid ways of coping. This could lead to greater success in coping efforts and over time provide the individual with greater confidence in their ability to handle many situations. A flexible coper may appraise more situations as benign or challenging rather than stressful. This would leave the flexible coper less vulnerable to stress and possibly less affected by the deleterious effects of the stress response.

Conversely, one would expect to see greater stress and poorer adjustment in individuals with less flexible coping

patterns. Those individuals with fewer coping strategies in their arsenal or who are less likely to use them selectively could be more prone to appraise many situations as threatening. These individuals may experience a higher frequency of more severe stress episodes. In effect, less flexible copers may lack the ability to successfully reduce a large amount of the stress in their lives. These individuals may even show similarities to individuals known to suffer from chronic stress. This could be one of the possible explanations for the literature showing greater stress and poorer adjustment in people with less flexible coping patterns. Conversely, coping flexibility may only operate in individuals who are experiencing stress. Much of the past research in this are has studies people who are experiencing major life stressors (e.g., recovering alcoholics). Adopting a flexible coping style may be a response to stressful conditions. Those individuals who are able to adopt this pattern in times of stress may be able to mediate stress better than those who do not. For example, under conditions of great stress, say the chronic illness of a loved one, the individual may try to cope using methods they have relied on in the past. Easterbrook (1959) has suggested that in times or stress an heightened emotional arousal people tend to restrict the number of incoming cues they can process. This may be similar to the increased reliance on heuristics which is observed during times of

stress (Lindsay & Norman, 1977). Under stress the individual relies on cognitive clustering strategies to decrease the amount of information they must process. Some of this clustering may involved an initial restriction in the types of coping used in a situation. In situations involving prolonged periods of stress or stress of a great magnitude these restricted patterns of coping may fail to mediate the stress experienced by the individual. It is at this point that the adoption of a flexible coping style may be a more effective way to cope. Increasing the variety of coping strategies used in various stressful situations may enable the individual to find coping options which prove effective as well as increase the individuals sense of coping efficacy and thus decrease the effects of stress. This increase in coping effectiveness many operate through altering appraisals of potentially stressful situations. Once an individual knows they can cope flexibly with new stressors as they arise they may view potential stressors as less threatening or harmful.

At this point in the study of coping flexibility, we do not know if flexibility is a coping pattern that operates under times of low stress or is a pattern which emerges only under conditions of higher or more chronic levels of stress. This dissertation project brought the study of coping flexibility into the laboratory. Under controlled laboratory conditions the study examined coping flexibility and its

relationships with stressor appraisals and self reported chronic stress levels. Using the two newly developed methods for assessing coping flexibility, the dissertation study examined the effects of this pattern of coping on individual's appraisals of stress. Each individual's flexibility in coping was assessed and the extent to which this coping pattern influenced appraisals of stress induced in the laboratory was examined. It was hypothesized that those individuals who showed greater flexibility in the ways they coped over several situations would appraise laboratory stressors as less aversive. As an extension of this idea the dissertation study sought to explore the possible association between coping flexibility and chronic life stress. It was hypothesized that individuals with lower levels of flexibility in their coping would appraise more situations in their lives as threatening or harmful and might, as a result, have higher levels of chronic life stress. In addition, as suggested by previous research in our laboratory, the dissertation study sought to increase information describing the construct validity of the revised Flex and WOC by including assessment of constructs thought to relate to coping flexibility.

It was expected that a better understanding of the ways in which coping patterns influence stress appraisals might help to explain evidence showing that people who cope in a more flexible manner are better able to handle stress than

those who cope in more rigid ways. In addition, it was thought that a better understanding of how an individual's basic patterns of coping affect the ways they view stressors might lead to better methods for helping those experiencing both chronic and acute stress.

## RESEARCH OBJECTIVES

### General Overview

The propose of this study was to determine the extent to which patterns of coping affect appraisals of stressful situations induced in the laboratory and to explore the possible associations between coping patterns and chronic life stress. More specifically, it examined the extent to which a more flexible or rigid coping style predicted appraisals of laboratory stressors and was associated with measures of chronic stress. The flexibility in individual's coping was be measured using the Flex card-sort measure (Schwartz & Daltroy, 1991; revised version, Lester, Smart & Baum, 1992) and the Ways of Coping Checklist flexibility procedure (Folkman & Lazarus, 1985; flexibility procedure, Lester, Smart & Baum, 1992). Study participants were brought into the lab and their appraisals of a stressful task, as well as their levels of chronic stress were assessed.

### Overview of Hypotheses

Previous research has shown that in general, a flexible coping approach leads to better coping with stress (for example, Gidden, 1988; Litman, et al, 1979; Hyer, 1984; Pearlin & Schooler, 1978). On the other hand, less flexible methods of dealing with stressful experiences are associated with less successful coping and depression (Litman, et al, 1979; Shapiro, 1986). Past research has also indicated that

appraisals of stressful situations are important to the success of coping efforts (Vitaliano, et al, 1990; Forsyth & Compas, 1987). Using two instruments newly designed to specifically measure coping flexibility, the revised Flex, and the WOC flexibility procedure this project explored the influences of coping flexibility on appraisals of stress and the relationship between flexibility and chronic stress.

Based on evidence from past examinations of the various ways in which people cope with stress, and the greater stress-reducing efficacy of flexible coping, the following hypothesis were proposed.

Overview of First General Question

The extent of flexibility in the coping patterns of individuals would predict the types of stress appraisals seen when these individuals were exposed to stressful situations in the laboratory. Those people who use more flexible coping patterns would appraise the laboratory situations as less stressful (measured by appraisal), and show less physiological arousal (smaller blood pressure and heart rate increases from baseline) and mood change (smaller changes from baseline), than those people who use a more rigid coping style.

Individual differences in reactivity (particularly cardiovascular reactivity) to the laboratory stressor was identified as a possible confounding factor in this measurement. An individual's level of reactivity to stress

might have covaried along with the patterns of coping they use and/or the ways in which they may have appraised and reacted to stressful events in the past. When exposed to a laboratory stressor some individuals may have reacted more or less strongly, independent of their appraisal of the situation or their flexibility in coping. This study was not designed to determine the extent to which these factors overlapped or conversely, may have worked independently to produce individual reactivity to the stressor. The proposed study sought to determine the extent to which flexibility of coping influenced appraisals of a laboratory stressor. Reactions to the stressor (heart rate, blood pressure and mood changes) served primarily as an indicator that a stressful event had been experienced.

Specific Hypothesis - 1

1.1 Individuals with coping greater flexibility (as measured on the revised Flex and WOC) will appraise the Stroop task as less threatening and harmful, more challenging, see more ways to deal with it and rate it as more controllable (four factors from the appraisal questionnaire) than will individuals with lower levels of flexibility.

1.2 Scores from the revised Flex and WOC will account for significant variance is appraisals of the Stroop task and reactions (changes in heart rate, blood pressure and mood) to the task.

Overview of Second General Question

Results from the proposed study would suggest a relationship between coping flexibility and chronic life stress. Data from a previous study had indicated that there might be a relationship between flexibility of coping and levels of adjustment to life change and reported somatic complaints (Lester, Smart & Baum, 1992). It was hypothesized that individuals who exhibited less flexible coping patterns would have greater chronic life stress than those with more flexible coping patterns. This chronic life stress would be reflected by greater numbers of symptoms reported on the SCL-90R, higher adjustment scores on the Recent Life Changes Questionnaire (but not necessarily more events listed), great severity in daily hassles, and greater perceived stress.

Because one of the major goals of this project was to further investigate the utility of the Flex coping instrument and the new scoring method for the WOC, a better understanding of the associations between coping flexibility as measured by these instruments and chronic stress levels would be valuable. While it was hypothesized that greater coping flexibility would be associated with lower levels of chronic stress, the converse should also be considered. In the Lester et al study, individuals who had greater numbers of life events, more somatic symptoms and greater perceived

stress, may have been more stressed and may, as a result of that stress, have been less flexible in their coping (Lester, Smart & Baum, 1992). In their process of coping with higher levels of chronic stress they may not have adopted a flexibly coping style. Additionally, some individuals might become so stressed that they adopt a scattered or non-contingent way of coping. This scattered method of coping looks like flexible coping but may fail to match coping strategies with the parameters of a given stressful situation. As indicated in the coping and appraisal literature, the accurate appraisal of a stressor is important to the choice of coping efforts (Vitaliano et al, 1990; Forsyth & Compas, 1987). For example, a person who appraises a situation as controllable, when in fact it cannot be controlled, might randomly choose a wide variety of problem-focused coping strategies that have low efficacy. This individual's coping efforts may fail to reduce stress and lead to even more stress.

Specific Hypothesis - 2

2.1 Higher levels of coping flexibility (as measured with the revised Flex and WOC) will be associated with greater levels of perceived stress as measured by the Perceived Stress Scale (Cohen et al, 1983).

2.2 Higher levels of coping flexibility (as measured with the revised Flex and WOC) will be associated with greater severity of daily hassles as measured by the

Hassles Scale (Lazarus & Cohen, 1977).

2.3 Higher levels of coping flexibility (as measured with the revised Flex and WOC) will be associated with greater adjustment to life changes as measured by the Recent Life Changes Questionnaire (Holmes & Rahe, 1967).

2.4 Higher levels of coping flexibility (as measured with the revised Flex and WOC) will be associated with greater numbers of self reported symptoms as measured by the Symptom Checklist 90-R (Derogatis, 1973).

## RESEARCH METHODS

### Overview and Design

The dissertation study examined the relationships between coping flexibility, appraisals of stress, and chronic life stress. It also sought to increase knowledge about the construct validity of two new measures of coping flexibility by tested the associations between these measures and several constructs thought to related to coping flexibility.

The flexibility in each participant's coping style was determined using the revised Flex card sort (Schwartz & Daltroy, 1991; Revised Flex, Lester, Smart & Baum, 1992) and Ways of Coping Checklist (WOC) flexibility procedure (Folkman & Lazarus, 1985; revised WOC procedure, Lester et

al, 1992). The WOC was administered in a way that allowed for calculation of an overall flexibility score and subscale flexibility scores for problem-focused, seeking social support, wishful-thinking, avoidance and blame coping. Each subject had their coping patterns assessed, then went through an extended baseline period where they completed cognitive tasks and filled out questionnaires, and then participated in the stress-inducing laboratory task (the Stroop). This yielded a between subjects, repeated measures study design with three periods of testing in the laboratory (coping assessment, a period were tasks and questionnaires were completed, and a stressful task period).

Study Participants

Subjects. Sixty-six adults (27 men and 39 women) participated in the study. Unequal numbers of men and women were allowed because previous testing revealed few gender differences in coping flexibility and appraisal. Subjects varied in age from 20 to 60 years with a mean age of 32.4 (SD = 9.5) (33.4 years for men, 31.7 years for women). Fifty percent of subjects were single and 74 % had at least a college degree. Subjects' income levels were above average with 45 % earning between $20 - 40,000 per year and another 21 % earning over $50,000 per year. Forty percent of subjects owned their primary residence.

Subject recruitment. Subjects were recruited through announcements placed in local newspapers and on bulletin

boards. These advertisements announced a study of "coping and task performance" for non-smokers ages 18 to 60. Potential participants were screened through a telephone interview. Subjects were asked about their age, whether or not they drive (one of the situations used to assess coping flexibility describes being a driver stuck in a traffic jam), and whether they had experienced a job or school change requiring a move (one of the situations used to assess coping flexibility describes having to move). Subjects were asked to describe their health and specific questions about physical and mental functioning were asked. Acceptable health criteria were met if an individual had no medical condition which interfered with their physical or mental functioning. Exclusion criteria included any serious medical condition which required medication, as well as the presence of colds or flu at the time of testing. Subjects were asked about what medications they were taking and excluded if those medications were known to affect cardiovascular function or mood.

People with a history of problems with alcohol or drug use were excluded. Only non-smokers were included in the study because smoking can alter cardiovascular parameters and smokers would have been forced to abstain during the laboratory session which might have altered their stress levels (Gatchel, Baum, & Krantz, 1989). Individuals were asked how much caffeine and alcohol they consumed per day.

Those consuming more than 6 caffeinated beverages and more than 2 alcoholic drinks on average per day were excluded.

Of the individuals who responded to the advertisements and were screened for inclusion in the study only 4 individuals were excluded. One individual did not drive, another was taking antidepressant medication, and two had a history of hypertension.

All participants were paid $ 20.00 for their participation in the laboratory session which approximately 2 1/2 hours. The session lengths varied somewhat with the longest being approximately 3 hours and 10 minutes to the shortest being just over 2 hours.

Questionnaires, Cognitive Tasks, and Coping Assessment

Overview of procedures. Basic demographic information was collected and coping flexibility was assessed in each participant using the revised Flex card sort instrument and revised WOC. Three timed tests assessing cognitive flexibility were then administered. In the second part of the laboratory session, questionnaires assessing numbers of recent life events and the adjustment needed to deal with those events, the severity of daily hassles and annoyances, perceived stress, levels of social support, perceived control and reported symptoms were filled out. Two additional questionnaires assessing individuals self esteem, and levels of neuroticism and introversion/extroversion were also completed.

During the period when subjects filled out these questionnaires, baselines for heart rate, blood pressure, and mood levels were established. During the stressful laboratory task (the Stroop) subject's heart rate and blood pressure were monitored and mood changes due to the task were assessed immediately following. Appraisal was measured at two time points. After the subjects had listened to the instructions for the Stroop they were given the appraisal questionnaire and asked to evaluate what they were about to do. After the conclusion of the Stroop they were again given the appraisal questionnaire and asked to evaluate the situation they had just been in. The specifics of the study procedures will be discussed in detail shortly.

Demographic information questionnaire. A standard demographics form was used. This questionnaire asked subjects to provide basic information such as education and socioeconomic levels. This questionnaire also confirmed the subjects' age.

Coping Flexibility. Coping flexibility was measured in several ways. The revised Flex card sorting instrument (Lester et al, 1992) was used along with the WOC scored to assess overall flexibility as well as flexibility in each of the subscales (problem, social support, wishful thinking, blame and avoidance focused coping) (Lester, et al, 1992).

1. The Flex card sort. The Flex card sort (Schwartz & Daltroy, 1991; Revised Flex: Lester, Smart & Baum, 1992) is

a measure designed specifically to assess the flexibility in an individual's coping style. The card sorting procedures were revised and tested in previous work in our laboratory. These procedures are in the review of past research using the Flex. For the dissertation study the same procedures for administering the Flex were followed but scoring procedures were updated. The ranges method for determining flexibility scores that was used in our previous work was found to have drawbacks, primarily that the mean and variance of the card sort values were not used in developing a flexibility score. A more accurate scoring method was developed for use in the study. The square root of the sum of squares was calculated for each sorting card and then an average for the 20 cards was determined. This score was used as the coping flexibility score for the Flex in the dissertation study. This calculation method was determined to be more accurate and more reflective of population variance than the ranges method. The square root of the sum of squares was chosen to represent flexibility rather than a sum of squares value or a standard deviation because it minimized problems with outlier values skewing the flexibility scores and it provided a score in the same metric as the raw card position scores.

2. The Ways of Coping Checklist. In addition to completing the Flex card sort in response to the four scenarios, each subject in the dissertation study completed

the Ways of Coping Checklist while thinking about the stressful situation described in each scenario (Folkman & Lazarus, 1985; revised flexibility procedure, Lester et al, 1992). Procedures for assessment of coping flexibility using the WOC were the same as those used in our previous research, but scoring procedures were changed such that the square root of the sum or squares was used as the flexibility score. Flexibility for the overall WOC as well as flexibility in problem, seeking social support, wishful thinking, avoidance and blame-focused coping efforts were determined.

Measures thought to relate to coping flexibility. Measures of three constructs thought to relate to coping flexibility were included in the dissertation study. Self esteem and cognitive flexibility were thought to relate to coping flexibility in a convergent manner and neuroticism was thought to relate in a divergent way.

1. Self Esteem. Self esteem was assessed using the measure developed by Rosenberg (1965). As described by Rosenberg, this 10 item inventory measures the extent to which an individual holds attitudes of acceptance or rejection toward themselves. Subjects are asked to indicate the extent to which they agree or disagree with such questions as "on the whole, I am satisfied with myself" and "I take a positive attitude toward myself". Some of the items are counterbalanced for scoring direction, such as "I

wish I could have more respect for myself". A 4-point scale ranging from "strongly agree" to "strongly disagree" is included.

2. Cognitive Flexibility. Three types of cognitive flexibility were assessed using the Kit of Reference Tests for Cognitive Factors (French, Ekstrom & Price, 1963). The factors tested with the "Kit" come from the theoretical and experimental work of Cattel, Thurstone, and Guilford. The first cognitive flexibility factor - semantic redefinition - has been described as "the ability to shift the function of an object or part of an object and use it in a new way" (Manual for the "Kit", p. 35). This factor was measured using the Gestalt Transformations Test. This test consists of 20 multiple choice questions in two parts of 10 questions each. Each question describes a functional problem or task and then presents choices of different objects that can be use in part or as a whole to solve the problem. For example, one problem is "to cut cheese", the presented objects used as options for completing this task are a guitar, a thermos bottle, a hammer, a pair of trousers, and a bed role. The correct answer is to use a string from the guitar to cut the cheese. Subjects are given 5 minutes to complete each part of the test. The score for this test is the number or correct responses.

The second cognitive factor tested was figural adaptive flexibility. This factor is described as the "ability to

change set in order to meet new requirements imposed by figural problems" (Manual for the "Kit", p.49). The Planning Air Maneuvers Test was used to asses this factor. The air maneuvers test is a complex set of situations in which the subject is assigned the role of a "skywriting" pilot. The test presents letters to be written in the sky and, following certain rules, the individual must indicate the correct direction and pattern a plane would fly to produce the letters. The score for this test is the number or correct parts of letters traced in 8 minutes.

The third factor - semantic spontaneous flexibility is described as "the ability to produce a diversity of verbally expressed ideas in a situation that is relatively unrestricted" (Manual for "Kit", p. 50). The Object Naming Test was used to assess this cognitive factor. In this test the subject is required to write down as many examples of a given category as they can think of (for example, fluids) in two minutes. This test is scored by counting the number of times the subject shifts or changes the direction of the items they are listing. For example, when listing fluids one might start with milk, juice, beer, but then shift to blood. This would be counted as a shift in train of thought. These shifts are scored as representations of semantic spontaneous flexibility. Two people participated in the scoring of this test. Criteria for shifts were determined and consensus between scorers was reached.

3. Neuroticism. The personality component of neuroticism as described by Eysenck & Eysenck (1968), refers to a "general emotional overresponsiveness, and liability to neurotic breakdown under stress" (p. 5). In the current study neuroticism was measured using the Eysenck Personality Inventory (EPI) (Eysenck & Eysenck, 1968). The EPI is composed of 57 short questions describing different ways one might feel and different things one might do. Subjects are forced to answer yes or no to questions such as "are your feelings hurt rather easily" and "do you often worry about things you should not have done or said". In addition to the neuroticism scale, the EPI also measures the personality dimension of extroversion-introversion. Eysenck and Eysenck (1968) described the extroversion end of the scale as testing "the outgoing, uninhibited, impulsive and sociable inclinations of a person" (p.5). While the dimension of neuroticism was of most interest in the current study, extroversion-introversion was also scored and included in analyses.

Appraisals of laboratory stressors. The ways in which individuals appraise stressful situations was assessed by examining how they viewed a stressful laboratory task (the Stroop). A paper and pencil questionnaire for assessing stress appraisals was developed and tested. This questionnaire contains 20 items with 7-point scales. It asks the subject to think about the event in question and

indicate the extent to which items are true or not true. Examples of the items on the questionnaire are; "I felt uncomfortable", "I thought there would be the possibility of some harm for me", "I thought about different ways I could deal with the situation", and "I thought it was a challenge but not any reason for concern". A score from each item is recorded. Questionnaire items are presented in a counterbalanced manner and this is taken into account in scoring. Scores on each of four factors (described below) were obtained. This was done by adding up scores from each of the questionnaire items found within a subscale.

This appraisal questionnaire was included in earlier work in our laboratory (Lester, Smart & Baum, 1992). A factor analyses of the appraisal questionnaire indicated a four-item factor structure. Factors included, "threat/harm", "challenge", "finding ways to deal with stress", and "controllability" (see Tables 5 and 6 for further information).

Assessment of chronic life stress. The second hypothesis of the current study suggested that individuals with less flexible coping styles may experience greater chronic stress than those who are more flexible. Levels of chronic stress were evaluated using several questionnaires: the Symptom Checklist 90-R (Derogatis, 1973), The Hassles Scale (Lazarus & Cohen, 1977), The Perceived Stress Scale (Cohen et al, 1983) and a modification of the Recent Life Changes

Questionnaire (Sarason & Johnson, 1979).

1. Symptom Checklist 90-R (SCL 90-R). Past research has shown that individuals who are experiencing chronic stress report greater numbers of symptoms on the SCL 90-R than those who are not stressed (Fleming et al, 1982). The SCL 90-R consists of a list of symptoms (Derogatis, 1973). Subjects are asked to indicate which of the symptoms they have experienced as bothersome in the preceding two weeks. Individuals also rate the extent to which they were distressed by the symptom using a scale ranging from 0 which indicates "not at all" to 4 indicating "extremely distressing". Symptoms include such things as "faintness or dizziness", "feeling blue", and "nausea or upset stomach". Scoring the SCL 90-R yields a total number of symptoms plus scores for nine subscales such as somatic complaints, anxiety, depression, interpersonal difficulties, and anger.

2. The Hassles Scale (Lazarus & Cohen, 1977). This inventory assesses the frequency and bothersomeness of daily small, but irritating events. A higher incidence of these annoyances has also been shown to be related to chronic stress (Kanner et al, 1981). The inventory consists of 117 possibly irritating events such as "inconsiderate smokers", "planning meals" and "unexpected company". The subject is asked to indicate which of the events have happened to them in the past month and to rate the severity of the hassles on a three point scale ranging from somewhat severe (score =

1) to extremely severe (score = 3). The number of hassles experienced by the individual is added up, as is the total severity score for all hassles experienced.

3. Perceived Stress Scale (Cohen et al, 1983). This is a 14-item scale which asks individuals about feelings and thoughts they have had over the past month. Items are presented with a 5-point scale. For example, one of the questions asks, "In the last month, how often have you felt that things were going your way?". The subject circles a response on the 5-point scale ranging from never (score = 0) to very often (score = 4). Other examples of questions are; "In the last month, how often have you felt that difficulties were piling up so high that you could not overcome then?", and "In the last month, how often have you felt nervous and "stressed?".

4. Recent Life Changes Questionnaire (Holmes & Rahe, 1967). Large numbers of changes in one's life has been shown to be related to higher levels of stress (Rahe, Hahan & Arthur, 1970; Rahe, 1975). The Life Change Inventory measures these changes by assessing both the number of major life events taking place and perceive impact of these changes. The inventory describes possible events in five areas; health, work, home and family, personal and social, and financial. For example, in the home and family areas the types of events described range from a change in residence to the death of a spouse. Each subject was asked to indicate

which, if any of the events they experienced in the past 19-24 months, 13-18 months, 7-12 months and 0-6 months. After the subject indicated which events they had experienced they were asked to indicate the amount of adjustment they needed to handle the event. Adjustment is indicated by a score of 1 to 100, 1 indicating almost no adjustment needed and 100 indicating the maximum adjustment.

Mediation of stress. This study was designed for in-depth exploration one of the primary mediators of stress, coping. The instruments for assessing coping have been described above. While the ways in which an individual copes are of primary importance to this study, two additional mediators of stress were measured, social support and perceived control. Social support was assessed using a six item paper and pencil inventory designed to measure perceptions of the availability of emotional support (Fleming et al, 1982). To fill out this instrument subjects were asked to indicate on a 7-point scale the extent to which they agree or disagree with statements describing social support.

Perceived control was assessed using a five item paper and pencil scale. Subjects were asked to indicate the extent to which they agree or disagree with statements describing the perceived control they felt that had over the things that happen to them and their environment (Fleming et al, 1982).

These two extra measures were included in the study for two reasons. Levels of both social support and perceived control may shed further light on the background levels of stress being experienced by subjects. In addition, the possible relationships between social support, perceived control and coping flexibility could be explored.

Stress-inducing Task

The Stroop color-word task (Stroop, 1935) was used to induce a stress response in the laboratory. The Stroop uses the names of various colors printed in ink different from the color the word names. For example, the word "BLUE" may be printed in red ink, green ink or orange ink. The subject is asked to write down the first letter of the color ink in which the word is printed. The task consists of pages of color words with 11 words per line. The amount of time allowed for each page is controlled by the experimenter who turns pages every 2 minutes. In addition to the subject being asked to indicate the ink colors, they are exposed to an interference tape through headphones. This tape is an over-dubbed recording of two people listing names of colors and occasionally fruits in a random order. To ensure that subjects attend to the tape they were required to listen for the names of fruits on the tape and call them out when heard. The instructions to subjects stressed the importance of working as quickly and accurately as possible and that the number of correct ink colors identified and fruits named

would be scored.

This task has been shown to elicit reliable increases in heart rate and blood pressure (Tulen, et al, 1989). For the purposes of the current study subjects were required to work on the task for 16 minutes (at 2 minutes per page, this was be 8 pages of Stroop). After the completing of the Stroop task each subject was given the appraisal questionnaire and asked to fill it out in reference to the stressful Stroop task they had just completed. They were also given the mood questionnaire to complete at this time. Pre-stress readings for both the appraisal and mood questionnaires were gathered before the Stroop.

All subjects participated in the stress-inducing Stroop task. During this task their heart rate and blood pressure were monitored with an automatic blood pressure monitor. Blood pressure and heart rate were chosen as the index of physiological arousal for this study based on evidence that coping may influence these cardiovascular parameters (King et al, 1990; Wright & Sweeney, 1989; Smith et al, 1989; Kamarck et al, 1990).

Assessment of stress in the laboratory

Several methods were used to assess the levels of stress experienced by individuals during the laboratory task. In addition to asking individuals how they appraised the laboratory stressor, physiological reactions to the stressor and mood changes occurring with the stressor were

measured. Blood pressure and heart rate responses were assessed using an automatic blood pressure monitor (specific procedures for assessing cardiovascular parameters are described in the procedures section). Mood changes were assessed using a short mood questionnaire developed specifically for use in laboratory situations, by Zakowski and colleagues (1992). This 26-item instrument asks subjects to indicate on a 5-point scale their level of various feelings described in the questionnaire. Examples of items are "feeling energetic", "feeling nervous", and "feeling fearful". The scaling for the questionnaire ranges from a level of 0, indicating that the feeling is occurring "not at all", to 4 indicating that the feeling is occurring in an extreme manner.

Four factors with adequate reliability have been identified within this mood measure. These factors are comfort, somatic complaints, tension, and fear. In a study of stress responses induced in the laboratory, Zakowski and colleagues (1992) found that after stress, subjects reported significantly more discomfort, tension, fear and somatic distress than before the stressor was experienced. This particular mood measure was chosen for use in the current study because it was specifically designed to assess mood change in reference to a laboratory stress situation.

## PROCEDURES

Introduction of Study and Informed Consent

Those individuals who met the criteria for participation in the study were scheduled for an experimental session. They were mailed a reminder of their appointment time and directions on how to reach the university as well as where to park. The afternoon or evening before their scheduled session each subject also received a reminder call and clarification of directions if needed.

The laboratory session was conducted in a comfortable room with a table, chairs, tape recorder for the Stroop task and automatic blood pressure monitor. Upon arrival at the experimental room, subjects were seated, read a short description of the study and asked to sign the informed consent document. The introductory description of the study will was as follows:

"The purpose of this study is to examine the ways in which people deal with things that happen to them and how this affects their performance on tasks. We are interested in how you deal with a variety of situations. There are no right or wrong answers in this study. During the time you are here today we will be doing several things. You will be filling out some questionnaires. These questionnaires will let us get to know you a little better and will ask you about how you react to various situations. Also, we will be assessing your performance on a task. You will do an

exercise where you need to write down some colors while you listen to a tape. During the time that you are filling out some of the questionnaires and doing the task we will be monitoring your heart rate and blood pressure. This is similar to having your blood pressure taken at the doctor's office but it will be done automatically with this machine here (point to automatic blood pressure monitor). Please feel free to ask questions if you don't know what to do. At this point, do you have any questions?"

Assessment of Coping

After informed consent was obtained the assessment of coping began. Subjects were given a large board containing the Flex sorting matrix, the stack of coping strategy cards, and an instruction sheet. After the subject read the instructions and was shown an example of sorting the cards, they were asked if they had any questions. If not, the first scenario (described under measures) was read to them. After completion of the first sorting situation subjects were asked to fill out a Ways of Coping Checklist in reference to the same scenario.

Blood pressure and heart rate measurement during coping assessment. Before the second coping scenario was presented blood pressure taking procedures were again explained and subjects hooked up to the automatic blood pressure machine. This involved wrapping the blood pressure cuff around the subjects non-dominant arm. Clothing which would interfere

with measurement was removed and the subjects were instructed to rest their non-dominant arm on the table as well as to avoid unnecessary movement. During the assessment of coping blood pressure and heart rate were measured five times at two minute intervals. This was done automatically by the blood pressure machine. The completion of the Flex and WOC was then repeated for each of the coping scenarios. The order of presentation of the coping scenarios was randomized. The average amount of time necessary for completion of the assessment of coping was approximately 50 minutes.

Assessment of Cognitive Factors

After the assessment of coping the three timed cognitive tests were administered. The Cognitive tests were always presented in the following order. First the Gestalt Transformations Test, second the Planning Air Maneuvers Test and third the Object Naming Test. Several subjects had difficulty with the Planning Air Maneuvers Test and could not complete it well enough for a score to be obtained. After the cognitive tests were completed subjects were asked if they would like a short break. About one third took a break.

Questionnaire Completion

After the break, subjects completed a number of questionnaires. Each subject was given a packet containing the following questionnaires: demographics, Perceived Stress

Scale, Eysenck Personality Inventory, Self Esteem Scale, Symptom Checklist 90-R, Recent Life Changes questionnaire, Daily Hassles Inventory, Perceived Social Support questionnaire, Perceived Control inventory, and last the Mood Questionnaire for pre-stress assessment. Questionnaires were always given in the same order. Individuals were instructed to sit quietly and fill out the questionnaires while their blood pressure and heart rate are monitored.

Blood pressure and heart rate measurement during questionnaire period. Blood pressure and heart rate measurements were started approximately 15 minutes into the questionnaire period to allow return to baseline after possible elevations caused by the cognitive tests. During the questionnaire period blood pressure and heart rate were measured five times at two minute intervals. This was done automatically by the blood pressure machine. The questionnaire portion of the study varied in length, with most people completing the questionnaires in about 45 minutes.

After the completion of the questionnaires subjects were again asked if they would like to take a break. Very few individuals took a break at this point in the study.

Completion of the Stroop task

Subjects were then administered the stressful Stroop task. The task instructions were pre-recorded and played to subjects. These instructions included several trial items to

insure that subjects understood what was required. After the instructions subjects were asked if they understood what was required of them. Their questions were answered until they understood the task. At this point one subject refused to do the Stroop. This individual was not included in the final subject count and data were not analyzed. When all questions were answered the subjects were handed an appraisal questionnaire and told "before you begin the task I need you to fill out this questionnaire in reference to the situation you are about to be in". After completing the appraisal questionnaire for before the Stroop, the headphones for the tape recorder (for the interference tape) were put on subjects and adjusted for comfort. If the automatic blood pressure monitoring equipment had been removed during the break it was be reattached to the subject and checked.

Heart rate and blood pressure measurement during the Stroop. Blood pressure and heart rate were monitored during the Stroop. Five blood pressure and heart rate measurements were taken during the Stroop. The first reading was taken approximately 15 seconds into the Stroop and four subsequent measurements were made at two minute intervals. All measurements were made automatically with the blood pressure machine. The subjects worked on the Stroop for approximately 16 minutes.

After subjects finished the Stroop task they were again asked to complete the appraisal questionnaire, this time in

reference to "situation you have just been in". The mood questionnaire was also administered a second time to assess changes in mood due to participating in the Stroop. With time for instructions, filling out the two appraisal questionnaires and mood questionnaire, and actually doing the Stroop, this portion of the study took approximately 35 minutes (see table 7 for a timeline of study procedures).

Debriefing

After completing the entire experimental session subjects were debriefed. They were read the following:

"Thank you for participating in this study about coping. We really appreciate your time and effort. In this study we are interested in looking at several different things. We are interested in the ways people coping with various situations. We think that some people may be more flexible in the variety of specific coping strategies they use over many situations. The cards you sorted and the paper and pencil checklist about methods for coping will help us assess the flexibility in they ways you cope".

"The other measures will help us look at various things that might be associated with this coping flexibility. Several of the questionnaires you filled out, for example the one about hassles, will let us look at how the daily stressors in your life might affect how you cope. Similarly the puzzles that you worked on, like the one with the airplanes, will let us explore how coping is related to

other cognitive activities".

"We think that those people who tend to be more flexible in their coping pattern may actually see situations in their lives as less stressful than those who cope in a more rigid manner. The questionnaire that you filled out before and after the color word naming task will help us look at how people view stressful situations. That questionnaire asked you how threatening or challenging you found the performance task to be. We think that people who use more flexible patterns of coping may see potentially stressful situations, such as the color word task, in a more positive way and be less stressed by them. We measured your heart rate, blood pressure, and changes in your mood to determine how stressed you were by the task. We are also wondering if men and women differ in the flexibility with which they cope and if coping changes as people grow older. We will try to address these questions by testing men and women of different ages".

"Before I let you go I want to remind you that there were no right or wrong answers to the questions we asked today. Everyone copes in there own way. We learn how to cope as we grow up and through experience find out what works and doesn't work for us. No method of coping is any better or worse than any other".

Each subject was then thanked and paid $20.00 for their

participation.

## RESULTS

### Data Analysis Overview

The current study explored two areas: 1) the extent to which coping flexibility predicted stress appraisals and, 2) the associations between coping flexibility and chronic stress. Analyses first established basic descriptive information about subjects' demographics and each of the variables in the study. Means for many of the variables were drawn directly from the raw data, but data reduction strategies were used in some cases.

Blood pressure and heart rate were measured five times at 2-minute intervals during the coping assessment, the questionnaire period, and the Stroop task. A mean for each of these periods was computed. Means for blood pressure and heart rate during the coping assessment and during the questionnaire period were averaged to form a pre-stress baseline. This baseline was compared to readings obtained during the stress task (Stroop) using a paired t-test.

Several different measures of coping flexibility were considered in this study. The Flex card sort measure was scored by the sum of squares method described in the methods section. This procedure was also used to derive flexibility scores from the WOC. An overall flexibility score for the

WOC was obtained by averaging the flexibility scores from each of the 42 questionnaire items. Subscale flexibility scores were also obtained by averaging flexibility scores from the WOC items included in each of the WOC subscales. This produced an overall flexibility score for the WOC as well as flexibility in problem solving, social support, wishful thinking, blame and avoidance coping approaches. In addition, the total number of coping strategies endorsed on the WOC was tallied for each of the stressful coping scenarios. A mean of these four totals gave an indication of the average number of coping strategies subjects' reported they would use in coping with the stressful situations described in the scenarios.

The next step in analysis of the data was directed toward providing information about correlates of coping flexibility as measured by the Flex and WOC. These analyses explored associations between coping flexibility, age and gender. This was accomplished both through simple correlational analyses and multiple regression/correlation analyses (MRC) as described by Cohen and Cohen (1983). The association between each of the flexibility measures (Flex and WOC) and the total number of coping items endorsed on the WOC was also calculated. Using similar procedures, the correlations among flexibility, self-esteem, neuroticism, and cognitive flexibility were also considered.

The third step of the data analysis addressed

hypothesis one - the extent to which coping flexibility predicted stress appraisals. Several MRC analyses were used to test this hypothesis. The first MRC equation entered age, gender, and Flex flexibility (coping flexibility as measured by the Flex card sort) as predictors of each of the four appraisal factors. Similar MRC analyses were conducted for flexibility as measured on the WOC. Age, gender, and overall WOC flexibility scores were entered in a hierarchical fashion as predictors of variance in each of the appraisal factors. Analyses for each of the WOC flexibility subscales were also done with age, gender and flexibility subscales as predictors of stress appraisals.

The fourth step of the data analysis explored hypothesis two - the predicted associations between coping flexibility and chronic life stress. This hypothesis was tested primarily through correlational analyses. Correlations between Flex flexibility and chronic stress as reflected by scores on the Perceived Stress Scale (Cohen et al, 1983), Daily Hassles Severity (Lazarus & Cohen, 1977), Recent Life Changes adjustment (Holmes & Rahe, 1967), and Symptom Checklist 90-R (Derogatis, 1973) were done. A correlation matrix for the associations between WOC overall flexibility as well as WOC subscale flexibilities and chronic stress indicators was also formulated. In addition, correlations between flexibility variables and two mediators of stress, perceived social support (Fleming et al, 1982),

and perceived control (Fleming et al, 1982) were conducted. Because of the large number of correlation needed to test hypotheses about the predicted associations between coping flexibility, chronic stress, and stress mediators, Bonferroni corrections in probability levels were made (Hays, 1981).

All statistical analyses was conducted using the SPSS-X data analytic programs package (SPSS, Inc., 1988).

Manipulation Checks

Two manipulation checks were performed to ensure that the Stroop color discrimination task was a stressful experience. Subjects's cardiovascular responses to the Stroop were monitored and compared with those obtained at baseline. Changes in subjective mood were also examined before and after the Stroop. Significant elevations in blood pressure and heart rate were observed. Comparison of systolic blood pressure (SBP), diastolic blood pressure (DBP), and heart rate (HR) during baseline and during the Stroop task were significant, indicating that the Stroop task increased arousal, $t(1,65) = -11.30$, $p < .001$ for SBP, $t(1,65) = -17.56$, $p < .001$ for DBP, and $t(1,65) = -9.34$, $p < .001$ for HR (see table 8). Correlations between age and blood pressure showed, as expected, that older individuals had higher blood pressures (range of $rs = +.28 - .40$, $p < .01$). No significant age correlations for heart rate were observed.

Mood also changed during the Stroop task. The mood questionnaire has four subscales designed to assess subject's perceptions of fear, discomfort, tension and somatic complaints (Zakowski et al, 1992). Paired t-tests comparing reported levels of each of these mood factors before and after the Stroop showed that fear and discomfort increased significantly during the Stroop, $t(1,65) = -3.96$, $p < .001$ for fear, and $t(1,65) = -8.21$, $p < .001$ for discomfort (see table 9).

Age was positively correlated with levels of somatic complaints before the Stroop and negatively correlated with discomfort reported after the Stroop, $r = +.27$, $p < .02$ for somatic complaints, and $r = -.24$, $p < .03$ for discomfort. Comparisons between men and women indicated that mood responses to the Stroop did not differ by gender.

These findings of increased blood pressure and higher levels of fear and discomfort during the Stroop suggested that the task was a stressful one. This was important to the test of hypothesis one, that coping flexibility might influence appraisals of stressful situations. The cardiovascular and mood data suggest that the Stroop task constituted a stressful situation.

Correlates of Coping Flexibility

To gain a better understanding of the construct of coping flexibility, analyses were directed at the relationships between this construct and age, gender and

other variables thought to relate to it. Constructs thought to relate to in a convergent way to coping flexibility were identified, and included self esteem and cognitive flexibility. Neuroticism was identified as a variable thought to be negatively related to coping flexibility.

Interrelationships of Coping Flexibility Variables

This study used several different ways of measuring coping flexibility. The Flex card sort measure and the WOC were used to establish measures of flexibility. For the WOC an overall flexibility score as well as subscale flexibility scores for problem-focused, social support, wishful thinking, blame and avoidance coping strategies were obtained (see Table 10 for mean and standard deviations for men and women on each of these flexibility variables).

As expected, these flexibility variables were related to each other (see Table 11). Flexibility as measured by the Flex was significantly correlated with the WOC overall flexibility score, $r = +.37$, $p < .001$, but only related to the WOC subscale flexibility scores for problem, blame and avoidance coping, $r = +.33$, $p < .003$ for problem-focused flexibility, $r = +.22$, $p < .04$ for blame-focused flexibility, and $r = +.47$, $p < .001$ for flexibility in avoidance coping.

These measures of flexibility were also compared with simple counts of endorsed coping strategies. Correlations between the average number of endorsed coping strategies on

the WOC, Flex flexibility and WOC flexibility were conducted. The average number of items endorsed was not related to flexibility as measured by the Flex. Number of coping options endorsed was negatively correlated with WOC overall flexibility, $r = -.55$, $p < .001$, and was also negatively correlated with each of the flexibility subscales of the WOC, $r = -.55$, $p < .001$ for problem-focused, $r = -.28$, $p < .01$ for social support, $r = -.61$, $p < .001$ for wishful thinking, $r$ -.29, $p < .009$ for blame, and $r = -.22$, $p < .04$ for avoidance coping. Simple counts of endorsed coping strategies have been used in past research as a way to measure flexibility. These results suggest that numbers of endorsed strategies and measured flexibility on the Flex or the WOC tap into different components of the coping process.

Age, Gender, and Coping Flexibility

The relationships between age, gender and coping flexibility were tested with a series of MRC analyses. MRC analysis entering age and gender as predictors of coping flexibility measured by the Flex showed that gender, but not age accounted for a significant proportion of variance in Flex flexibility, $\Delta R^2 = .064$, $p < .04$. A similar analysis using age and gender to predict flexibility as measured by the overall WOC score showed neither age nor gender effects. For WOC subscale flexibility scores age did not account for significant variance in flexibility but gender contributed

to variance accounted for in the problem-focused and avoidance scales, $\Delta R^2 = .072$, $p < .05$ for problem-focused, and $\Delta R^2 = .18$, $p < .002$ for avoidance coping.

As a follow up to this analysis, paired t-tests comparing men and women on each of the WOC subscale flexibility variables were conducted. No significant differences in gender for the flexibility subscales measuring social support, wishful thinking and blame types of coping were observed. Gender differences for flexibility in use of avoidance coping did emerge with men showing greater flexibility, $t(1,64) = -2.97$, $p < .004$. A marginal difference for flexibility in problem-focused coping also emerged. Men showed marginally greater flexibility in the use of this coping approach $t(1,64) = -1.90$, $p < .062$.

In examining the associations between age, gender and coping flexibility as measured by the Flex and WOC it appeared that flexibility as measured by the WOC may be a more robust measure because it was not highly influenced by age or gender. This could aid or hamper research efforts because real gender and age differences may exist but not be measured by this instrument. The WOC method may also be a more comprehensive measure because of the availability of subscale flexibility scores.

Self Esteem and Coping Flexibility

The relationship between self esteem and coping flexibility was then examined. Self esteem was negatively

related to age, $r$ = -.25, $p$ < .02, but no gender differences were observed (see Table 12). Self-esteem was not significantly correlated with any of the measures of coping flexibility.

Neuroticism and Coping Flexibility

Another variable that could be related to coping flexibility was neuroticism. Analyses of neuroticism, as measured by the Eysenck Personality Inventory (Eysenck & Eysenck, 1963) and coping flexibility indicated that this relationship was very weak. No age and gender differences in neuroticism were observed (see Table 12). Correlations between neuroticism, Flex flexibility, and WOC overall flexibility were not significant. One of the WOC flexibility subscales, wishful thinking, was negatively correlated with neuroticism, $r$ = -.21, $p$ < .05, suggesting that greater flexibility in wishful thinking was associated with less neuroticism. (see Table 13). In addition to measuring neuroticism, the Eysenck scale assesses the construct of introversion-extroversion. None of the measures of coping flexibility were related to the introversion-extroversion construct and no age and gender differences were observed.

Cognitive Flexibility and Coping Flexibility

The associations between coping flexibility and cognitive flexibility were tested using correlational analyses. Three subtypes of cognitive flexibility were assessed, figural adaptive flexibility (as measured on the

Air Maneuvers Test), semantic spontaneous flexibility (Object Naming Test), and semantic redefinition (Gestalt Transformations Test), (French et al, 1963). Gender differences were found in several of these cognitive variables (see Table 12). T-tests comparing men and women on each of the cognitive variables indicated that men obtained higher scores on the tests of figural adaptive flexibility, $t(1,64) = -2.57$, $p < .01$ and semantic redefinition, $t(1,64) = -3.34$, $p < .001$.

Correlations between coping flexibility and the cognitive variables showed only one consistent pattern. Both flexibility as measured by the Flex and the overall WOC were correlated with figural adaptive flexibility (Planning Air Maneuvers Test), $r = +.43$, $p < .001$ for the Flex and $r = .35$, $p < .004$ for the overall WOC. Figural adaptive flexibility was also correlated with flexibility on the WOC problem and avoidance flexibility subscales, $r = +.35$, $p < .003$ for problem-focused, and $r = +.42$, $p < .001$ for avoidance-focused coping (see Table 13). This cognitive factor assessed the ability of individuals to use a complex set of rules and change "cognitive set" in order to meet new requirements imposed by the test.

Because of the gender difference in this cognitive variable, correlation analyses testing the association between figural adaptive flexibility and problem and avoidance coping flexibility were conducted for men and

women separately. Correlations for men alone showed no significant association between these variables. The correlations for women alone indicated that higher scores on the figural adaptive flexibility test were associated with greater flexibility in both problem-focused and avoidance coping, $r$ = +.31, $p$ < .04 for problem-focused, $r$ = +.56, $p$ < .001 for avoidance. Because the figural adaptive flexibility test - Planning Air Maneuvers - was more difficult for women (lower mean score) the more flexible use of problem-focused and avoidance coping strategies may have helped women gain higher scores on this test.

The tested associations between coping flexibility, self esteem, neuroticism and cognitive flexibility revealed very little. These results indicated that coping flexibility is a construct independent of self esteem and neuroticism and that its relationship to cognitive flexibility may be different for men and women.

Testing Hypothesis 1: Coping Flexibility and Appraisals of Stress

The first hypotheses, that flexibility in coping predicted stress appraisals, was tested in two ways. MRC analyses were used to determine whether coping flexibility accounted for significant variance in appraisal.

Appraisal was measured both before and after the stressful Stroop task. Paired t-tests comparing appraisal factors before and after the Stroop showed no significant

differences for levels of challenge, perceiving many ways to deal with stress, and threat/harm (see Tables 14a and b). Differences were observed for the appraisal factor of control with appraised controllability of the stressor being significantly higher after the Stroop, $t(1,65) = -3.48$, $p < .001$.

Correlational analyses examined the relationships between coping flexibility and heart rate, blood pressure and mood changed that occurred in reference to the Stroop. Increases in blood pressure and heart rate in response to the Stroop were not associated with coping flexibility as measured by the Flex or the WOC. In addition increases in the mood variables of fear and discomfort were not associated with coping flexibility as measured by the Flex or WOC.

MRC analyses entering age, gender, and then coping flexibility as measured by the Flex in a hierarchical manner were used to predict variance in each of the appraisal factors - challenge, threat/harm, "many ways to deal with stress", and control. Because appraisal was measured both before and after the stressor was administered, MRC analyses were conducted on both sets of appraisal variables. Neither age, gender, nor Flex flexibility accounted for significant variance in the appraisal factors of challenge, threat/harm or control before or after the stressor. Age accounted for significant variance in the "many ways to deal with stress"

factor as appraised before the Stroop task stressor but not after it, with $\Delta R^2 = .20$, $p < .001$.

A similar pattern of results emerged for MRCs testing the ability of coping flexibility as measured by the WOC overall and subscale flexibility scores to predict appraisal. Coping flexibility as measured by the WOC did not predict significant variance in stress appraisals either before or after the stressor.

Correlational analyses testing associations between appraisal and the instruments measuring cognitive flexibility was also carried out. Appraisals of greater challenge measured before the Stroop were associated with greater figural adaptive flexibility, $r = +.30$, $p < .01$. Appraising more ways to deal with the stressor before it occurred was associated with greater semantic redefinition ability, $r = +.30$, $p < .01$.

Summary of specific hypotheses 1 results. None of the three specific hypotheses included under the testing of associations between coping flexibility and chronic stress were upheld.

Hypothesis 1.1 This hypothesis suggested that individuals with coping greater flexibility (as measured on the revised Flex and WOC) would appraise the Stroop task as less threatening and harmful, more challenging, see more ways to deal with it and rate it as more controllable (four factors from the appraisal

questionnaire) than will individuals with lower levels of flexibility. Multiple regression analyses indicated that coping flexibility did not account for significant variance in stress appraisals. This suggests that individuals who have higher or lower levels of coping flexibility do not differ in the ways in which they appraised the Stroop.

Hypothesis 1.2 This hypothesis suggested that scores from the revised Flex and WOC would account for significant variance is appraisals of the Stroop task and reactions (changes in heart rate, blood pressure and mood) to the task. Correlation analyses and multiple regression analyses indicated that there were not relationships between coping flexibility as measured by either the Flex or WOC and appraisals or reaction to the Stroop.

Testing Hypothesis 2: Coping Flexibility and Chronic Stress

Analyses were next directed at examining predicted relationships between coping flexibility and chronic stress (hypothesis two). Correlations between coping flexibility, as measured by both the Flex and WOC, and the chronic stress indicators were calculated. The possible relationships between coping flexibility and two mediators of stress, social support and perceived control were also examined in this manner. Because of the large number of comparisons needed to explore these relationships the probability level for significance was adjusted upward to a $p < .01$ level, in accordance with the Bonferroni procedure (Hays, 1981).

The measures used as indicators of chronic stress were scores on the Perceived Stress Scale (Cohen et al, 1983), Daily Hassles Scale severity score (Lazarus & Cohen, 1977), Recent Life Changes adjustment score (Holmes & Rahe, 1967), and Symptom Checklist 90-R (Derogatis, 1973). The two stress-mediator variables were assessed with the Perceived Social Support Scale (Fleming et al, 1982), and Perceived Control Scale (Fleming at al, 1982). Explorations of age and gender differences in the chronic stress indicators and associations between these measures and the measures of cognitive flexibility were also done. Correlations suggested that older individuals reported lower adjustment ratings for life events and rated daily hassles as less severe, $\underline{r}$ = -.32, $\underline{p}$ < .005 for events adjustment, and $\underline{r}$ = -.21, $\underline{p}$ < .05 for severity of hassles. The cognitive flexibility dimension of semantic redefinition was negatively related to reported levels of perceived stress and numbers of reported symptoms, $\underline{r}$ = -.25, $\underline{p}$ < .02 for perceived stress and $\underline{r}$ = -.22, $\underline{p}$ < .04 for reported symptoms.

Correlations between coping flexibility as measured by the Flex and chronic stress indicators showed no significant associations (see tables 15 & 16). There were also no significant associations between coping flexibility as measured by the overall WOC or any of the subscales and the measures of chronic stress (see table 15). In addition no associations were observed when comparing the measures of

coping flexibility with levels on the two stress mediator variables, perceived social support and perceived control (see table 15).

Summary of specific hypothesis 2 results. None of the four specific hypotheses addressing the relationship between coping flexibility and chronic life stress were upheld.

Hypothesis 2.1 This hypothesis suggested that higher levels of coping flexibility (as measured with the revised Flex and WOC) would be associated with greater levels of perceived stress as measured by the Perceived Stress Scale (Cohen et al, 1983). Correlational analyses indicated that there was no association between coping flexibility and levels of perceived stress.

2.2 This hypothesis suggested that higher levels of coping flexibility (as measured with the revised Flex and WOC) would be associated with greater severity of daily hassles as measured by the Hassles Scale (Lazarus & Cohen, 1977). Correlational analyses showed no association between coping flexibility and severity of daily hassles.

2.3 This hypothesis suggested that higher levels of coping flexibility (as measured with the revised Flex and WOC) would be associated with greater adjustment to life changes as measured by the Recent Life Changes Questionnaire (Holmes & Rahe, 1967). Again, correlational analyses indicated that there was no association between coping flexibility and the chronic stress variable of adjustment to

life changes.

2.4 This hypothesis suggested that higher levels of coping flexibility (as measured with the revised Flex and WOC) would be associated with greater numbers of self reported symptoms as measured by the Symptom Checklist 90-R (Derogatis, 1973). Correlational analyses indicated that coping flexibility was not related to level of self reported symptoms.

The conclusion that no relationship exists between coping flexibility and chronic stress, as measured in this study, seems apparent in these analyses.

# DISCUSSION

## Overview of Discussion

This study was primarily designed to explore two issues. The first objective was to determine the extent to which coping flexibility predicted appraisals of stress. Specifically, it was hypothesized that individuals with greater coping flexibility would appraise the laboratory stressor as less threatening than would those with less coping flexibility because they knew that they had a greater variety of coping strategies that could be used in the situation. The second objective was to examine possible relationships between coping flexibility and chronic stress. It was predicted that individuals who used more flexible coping would have less chronic life stress than those who coped more rigidly because they would have a greater tendency to view potential stressors as less threatening.

This discussion will consider what has been learned about the measurement of coping flexibility and what new information has been obtained regarding the correlates of this construct. The discussion will then specifically address what has been learned in reference to the study hypotheses and possible explanations for these research findings. The section will then conclude with a description of how this project has added to knowledge about coping flexibility and future research directions.

Measuring Coping Flexibility

As part of the project two methods for assessing coping flexibility were used - the revised version of the Flex card sort and the WOC flexibility method (Lester, Smart & Baum, 1992). Both methods were easy to administer and appeared to measure a construct different from indices of coping flexibility used in the past. Flexibility measured by the revised Flex and the WOC with its subscales were found to be different than flexibility measured by numbers of endorsed coping items. Past studies relying on counts or numbers of endorsed coping strategies used in a given situation may well have been measuring a separate construct, such as coping complexity, rather than coping flexibility.

Age, Gender and Coping Flexibility

As expected, each of the flexibility measures was related to each other but varied somewhat in their relationships with age and gender. Flexibility as measured by the Flex a previous study in our laboratory (Lester et al, 1992) showed no gender differences but indicated that flexibility decreased with advancing age. The present study results showed no age differences but indicated that men were slightly more flexible than women. These findings suggest caution when using the Flex and indicate that further work delineating gender and/or age differences in this measure must be carried out if it is to be used.

Relationships between gender, age and flexibility as measured by the WOC also differed somewhat from the previous work in our laboratory (Lester et al, 1992). In our previous study several gender and age differences were observed with men being somewhat more flexibly on two of the WOC subscales, and older individuals being less flexible. The findings for the dissertation study indicated that age was not associated with overall flexibility on the WOC or any of the subscales. Dissertation study gender results indicated that men were somewhat more flexible in the problem-focused and avoidance areas but not in the social support or wishful thinking areas as observed in the Lester et al study.

While results for gender and age do vary somewhat between the previous study and the present study these differences are not of great magnitude. Further work with a larger population of men and women, particularly individuals who are over 50, is necessary to clarify the relationships between gender, age, and flexibility.

Correlates of Coping Flexibility

Results from the dissertation study indicate that there were no identifiable relationships between coping flexibility (as measured in this study) and self esteem, neuroticism, and introversion-extroversion. A pattern for women suggesting that greater coping flexibility was associated with the cognitive construct of figural adaptive flexibility did emerge. Men, on average, scored better on

the test for figural adaptive flexibility, and greater coping flexibility may have helped women on a test they found to be particularly difficult.

Previous research using the flex and WOC as well as data from the dissertation study do suggest several things about coping flexibility. Higher levels of coping flexibility may be associated with greater self monitoring, less vulnerability to social desirability pressures, greater figural adaptive cognitive flexibility, greater well-being and achievement and less extreme stress reactions. Coping flexibility does not appear to be associated with neuroticism, introversion-extroversion, and the cognitive components of semantic spontaneous flexibility and semantic redefinition ability. In addition, firm conclusions about the direction for relationships between age, gender and coping flexibility did not emerge from the available data.

Future work with the revised Flex and WOC flexibility method should examine the concurrent validity of these measures. Groups of individuals thought to be highly flexibly, for example people with professions in which they must frequently cope with different stressors should be compared with individuals thought to be more rigid. These individuals should be tested during times of both low stress and higher stress. As will be discussed shortly, coping flexibility may be an individual difference which only emerges under conditions of higher stress. One might

speculate that these tow groups might differ slightly at a low stress time but that differences would be magnified during periods of greater stress.

Hypothesis 1 - Coping Flexibility and Stress Appraisals

Manipulation checks on the laboratory stressor indicated that it was stressful, but levels of coping flexibility were not related to appraisals of this laboratory stressor. The first hypothesis, that individuals with greater coping flexibility would appraise the Stroop task as being less stressful than those who coped more rigidly, was not supported. Hypothesis one was comprised of two parts, the first suggested that individuals with greater coping flexibility would appraise the Stroop as being less threatening or harmful, more challenging, that they would find more ways to deal with it, and that they would rate it as more controllable. The second part of this hypothesis suggested that coping flexibility would account for significant variance in appraisals of, and reactions to the Stroop. Results indicated that neither of these hypotheses were upheld. There was no relationship between coping flexibility and appraisals of the laboratory stressor, or reactions to it.

The absence of associations between coping flexibility, appraisal and stress reactions was observed for flexibility measured both by the Flex and the WOC. Age did emerged as a significant predictor of appraised control and ways to deal

with the Stroop stressor, with older individuals appraising the situation as more controllable and easier to deal with.

There may be several explanations for this lack of association between coping flexibility and appraisals of the task. The Stroop task may not have been a severe enough stressor to elicit variability in appraisals. While the cardiovascular and mood data indicated that the task was stressful, it may not have been stressful enough or meaningful enough to be appraised as threatening or harmful, but rather may have been seen as challenging. Data indicate that mean ratings of challenge appraisals were higher than ratings for appraisals of threat and harm. Subjects knew that the Stroop was simply a time-limited laboratory task and it may not have been viewed as being very important or having any impact on the individual. More importantly, the Stroop is a straightforward task containing little ambiguity. Clear instructions are given and subjects understand what the requirements of the task are and what is going to occur during the task. There is very little ambiguity in the situation created by the Stroop. As Lazarus and Folkman (1984) have suggested, when situations become more ambiguous appraisals will vary to a greater extent; when situations are less ambiguous, appraisals are less variable and more clearly determined by the stimulus. It may be, that in order to identify a true relationship between coping flexibility and the appraisal process, a situation

with greater impact and a greater degree of ambiguity must be present.

Another possible explanation for these results is that coping flexibility may not be an individual difference observable in people except under severely stressful conditions. Coping flexibility may be a response to stress and not a pattern that exists independent of stressful situations.

In their initial work with the Flex and chronic pain patients Schwartz and Daltroy (1991) found that greater flexibility was associated with somewhat higher levels of depressed affect. It may be that heightened coping flexibility is a response to stressful situations causing depressed affect or other stressful situations where frequently used methods of coping have proven to be ineffective. When confronted with a severely stressful situation the individual may try to cope using strategies they have frequently employed in the past and are comfortable with. Easterbrook (1959) has suggested that in times of stress or heightened emotional arousal people tend to restrict the number of incoming cues they can process. This cuts down on the amount of confusing information they need to deal with. Initially, when under stress individuals may increasingly rely on clustering techniques or heuristics to help them make decisions (Lindsay & Norman, 1977). Some of this early reaction to

stress may actually involve a restriction in the number and type of coping strategies used. In this respect coping flexibility may not be a particularly adaptive way to cope as an immediate reaction to stress.

In situations involving prolonged periods of stress or stress of great magnitude these restrictive patterns of coping may fail to mediate the stress experienced by the individual. it may be, that it is at this point that the adoption of a flexibly coping pattern may be a more effective way to cope. Increasing the variety of strategies used may enable the individual to find coping options that prove effective as well as increase the individuals sense of coping efficacy and thus decrease the effects of stress.

Much of the past research on coping flexibility has examined this construct in people experiencing severe life stress. For example, the study conducted by Litman and colleagues on recovering alcoholics (Litman et al, 1979). This research found that recovering alcoholics who adopted a "multiplicity of coping styles" were able to maintain abstinence better than those who used fewer coping methods. For these alcoholics the use of alcohol as a preferred coping method was no longer effective at reducing stress (for those who did not relapse anyway). When faced with stress and this ineffective way of coping, those individuals who adopted a pattern of coping flexibility had better outcomes that those who did not. It may be that using

flexibly coping does not alter appraisals, but is simply a more effective pattern of coping that arises in some individuals under conditions of severe stress where use of more restricted coping methods has failed.

If coping flexibility is a response to stress and emerges only if more rigid methods of coping have failed, it may be an individual difference which is measurable only during times of stress. In the dissertation study the effect size of the relationship between coping flexibility and appraisals of stress was very small. Given the number of study participants the power of statistical tests exploring this relationship was only 10-15%. In order to have achieved an acceptable level of statistical power (say 60%) 1000 to 1400 people would have needed to be tested in the study.

Further work in this area needs to test individuals longitudinally during periods of low stress and high stress. Ideally, one would assess coping flexibility in individuals during low stress and several times during a high stress situation and determine whether any of the measurements predicted success in adjustment to the higher magnitude stressor. Using an longitudinal study design would also address questions about the point at which flexibly coping is adopted as a coping style. It may be that flexibility in coping is not a particularly salient individual difference during low stress periods and that when initially faced with a severe stressor people become more rigid. But, during

periods of severe stress, after rigid methods of coping have failed, those individuals who adopt a flexible coping style may be the one who adapt to stressful situations better than those who remain rigid.

Hypotheses 2 - Coping Flexibility and Chronic Life Stress

The second goal of the dissertation study was to identify relationships between coping flexibility and indices of chronic stress. It was hypothesized that individuals with greater coping flexibility would appraise situations in their lives as being less stressful and would indicate lower levels of chronic life stress. No support for this relationship was observed.

The lack of association between flexibility and chronic stress bring us back to the idea that coping flexibility may well be a response to stress, not an independent component of the coping process. Much of the research examining coping flexibility has considered specific groups of individuals in stressful situations. As discussed previously, Litman and colleagues found greater coping flexibility to be an important component of coping with stress after alcohol withdrawal (Litman et al, 1979). Felton, Revenson and Hinrichson (1984) found that coping flexibility helped reduce stress in the chronically ill. Shapiro (1986) indicated that coping flexibility led to better adjustment in families with a seriously ill or handicapped child. In all these situations individuals were attempting to cope

with serious problems in their lives. In these instances coping flexibility as a response to prolonged stress may have emerged. If these same individuals' coping was assessed at a time in their lives without a major stressor, flexibility might not have been associated with appraisals or mediation of stress, or with other components of their personality.

The participants in the present study appeared to have fairly low levels of chronic stress. On average, perceived stress levels were low. Of a possible maximum rating of 70 points on the Perceived Stress Scale (Cohen et al, 1983) study subjects' mean points rating was only 23.8. On the 14-item scale this translated into subjects indicating that they "never" or "rarely" experiencing the listed indicators of stress. In addition, many of the study participants had not experienced stressful life events in the two years before the study. Over 50 % of study participants reported no stressful life events for the period 13 to 24 months before the study. For the period 12 months preceding the study 65.4 % reported 2 or fewer events. This data suggests that the participants in the current study were not experiencing high levels of chronic life stress and were probably not comparable to individuals tested in other studies on coping flexibility, such as recovering alcoholics.

The effects of coping flexibility may follow a pattern

similar to that observed for some aspects of social support. Research has suggested that social support mediates stress through two different mechanisms (Cohen & KcKay, 1984; Cohen & Syme, 1985). The main effects model of social support suggests that having support is helpful even when no stress is present and that not having support or the loss of support can cause stress. Alternatively, social support may work as a stress-buffering system, helping individuals cope with stressful situations.

Results from this study indicate that coping flexibility does not conform to a main effects model. The hypotheses of the study assumed that having flexible coping would affect individuals at the basic level of altering appraisals of low level stressors in the laboratory. This was clearly not the case in the present study. In addition, it was thought that coping flexibility would "predispose" individuals to lower levels of chronic stress. This was also not supported by the data. However, past studies indicate that among individuals experiencing major stressors, greater coping flexibility is associated with better adaptation. Coping flexibility may well follow a stress-buffering model to the extent that when a major or chronic stress situation is present having flexible coping may enable the individual to cope more effectively. In conditions were little stress is present, coping flexibility may not be a particularly salient part of coping and may not alter appraisals of

stressors or be associated with other components of personality.

If coping flexibility is an individual difference which emerges only under times of stress, this presents difficulties for the validation of tools used to measure the construct. The revised Flex and WOC may not be sensitive enough measures to assess coping flexibility during times of more severe stress. Assessment may need to return to measuring coping flexibility in reference to particularly stressful events that are unique to the individuals experiencing them. For example, to the person who is coping with cancer, asking them how the deal with being stuck in traffic may seem absurd. Coping flexibility may not be most adequately tested using a card sort or questionnaire format. Assessment through structured interview may be a more accurate way to measure the construct and investigate its correlates. Such an interview format would have the individual identify stressful situations and describe in the methods they used to cope with the identified stressors.

Conclusions and Future Studies of Coping Flexibility

The results of this dissertation study did not support the hypothesized associations between coping flexibility, stress appraisals and chronic life stress. While study hypotheses were not supported, data did lead to several conclusions and has added to our understanding of coping flexibility.

Measurement of coping flexibility.The dissertation project used two methods for measuring the flexibility construct, the revised Flex card sort and the WOC flexibility method. Both flexibility methods proved to be easily administered and understood by subjects but may not test flexibility at the point in the stress process (during more severe stress) when it is a particularly salient individual difference. To fully understand coping flexibility and its correlates testing may need to be carried out during times of more severe or chronic stress and be conducted through an interview format. A previous study in our laboratory (Lester et al, 1992) and the dissertation study were able to identify associations between coping flexibility and several constructs thought to relate to it, even during times of low stress. Flexibility as measured by the revised Flex and the WOC flexibility method differed somewhat in their associations with related constructs. Coping flexibility measured with the WOC (both overall and subscale scores) was more highly associated with behavioral adaptability as measured by the Self-Monitoring Scale (Snyder, 1974) than flexibility measured by the Flex (Lester et al, 1992). Flexibility as measured with the WOC was also associated with greater ability in the cognitive function of figural adaptive flexibility. WOC flexibility was not related to self esteem, neuroticism or introversion/extroversion, nor in its overall measure, was

it related to many of the personality components assessed by the MPQ. The WOC overall flexibility scale was associated with lower level of social closeness as measured by the MPQ and several of the WOC subscale flexibilities were positively associated with the MPQ components of achievement and stress reaction. The availability of information about coping flexibility for the WOC subscales adds a great deal to the usefulness of this instrument. The WOC subscales are well founded in both theory and research and give the WOC method its greatest advantage over the Flex method. Being able to explore flexibility in coping approaches emphasizing problem solving, social support seeking, wishful thinking, avoidance and blame greatly augments the information obtained when using this measure.

Age, gender, and coping flexibility. Another conclusion from this study is that age and gender may not have simple relationships with coping flexibility; age may show nonlinear effects with flexibility levels varying over different age spans. For example, younger individuals with less life experience may have less knowledge about different methods for coping and may have more limited resources to bring to bare when faced with a stressful situation. Similarly, elderly individuals may be restricted in their access to supportive others or may also have fewer instrumental resources available to use in coping with stressors. The importance or coping resources should not be

minimized. An individual of any age may be less likely to cope flexibly if they lack the resources that provide a large number of coping options. For example, one would be less likely to cope through social support if no support were available or might be less likely to seek out instrumental assistance from social service organizations if one did not speak their official language.

Additionally, while the results of this study indicate that men may be somewhat more flexible in their use of several types of coping this should also be more fully explored. These gender differences in coping may reflect general coping differences between men and women or may reflect differences in the ways men and women appraise the controllability of stressful situations. For example, in the current study, men rated the task as more controllable than women did. This difference was not significant but may have exerted a subtle influence on the ways men coped with the situation.

The research area of the fit between appraisals and the use of problem and emotion-focused coping is a potentially fruitful area for those interested in coping flexibility. An accurate appraisal of the controllability of a situation and the choice of an appropriate set of coping strategies would be much more efficient if the individual had a set of coping methods they could use flexibly.

Coping flexibility, appraisals, and chronic stress.

An additional conclusion that may be drawn from this research is that coping flexibility may not be associated with low levels of chronic stress or influence an individual's appraisals of stressors when those stressors are minor and have little personal impact. As an individual difference, coping flexibility may not be particularly salient except in periods of more intense or chronic stress. Research in this area must explore coping flexibility in a longitudinal manner. Individual's flexibility of coping should assessed during periods of low stress and then subsequently during high stress times. During periods of greater stress coping flexibility may well be associated with greater self esteem or influence reappraisals of the stressful situation and appraisals of new stressors that might arise. Correlates of coping flexibility may also emerge more clearly during high stress periods. Studying coping flexibility in individuals experiencing greater levels of stress may help delineate what components of the construct that help to reduce stress or affect appraisals. Finally, clearer understanding of the correlates of coping flexibility during high stress would help in the refinement of assessment tools and may eventually aid in intervention efforts with more rigid copers.

In conclusion, the results of the dissertation study failed to support the project hypotheses. As measured by the Flex and the WOC method, coping flexibility did not

influence appraisals of a laboratory stressor. Coping flexibility was also not associated with low levels of chronic stress. While project hypotheses were not supported, the results did add to what is know about coping flexibility and suggested new several research directions. Finally, the dissertation study indicated that the relationships between coping flexibility, appraisal and stress are complex ones worthy of additional attention.

Figure 1: Flex Sorting Board

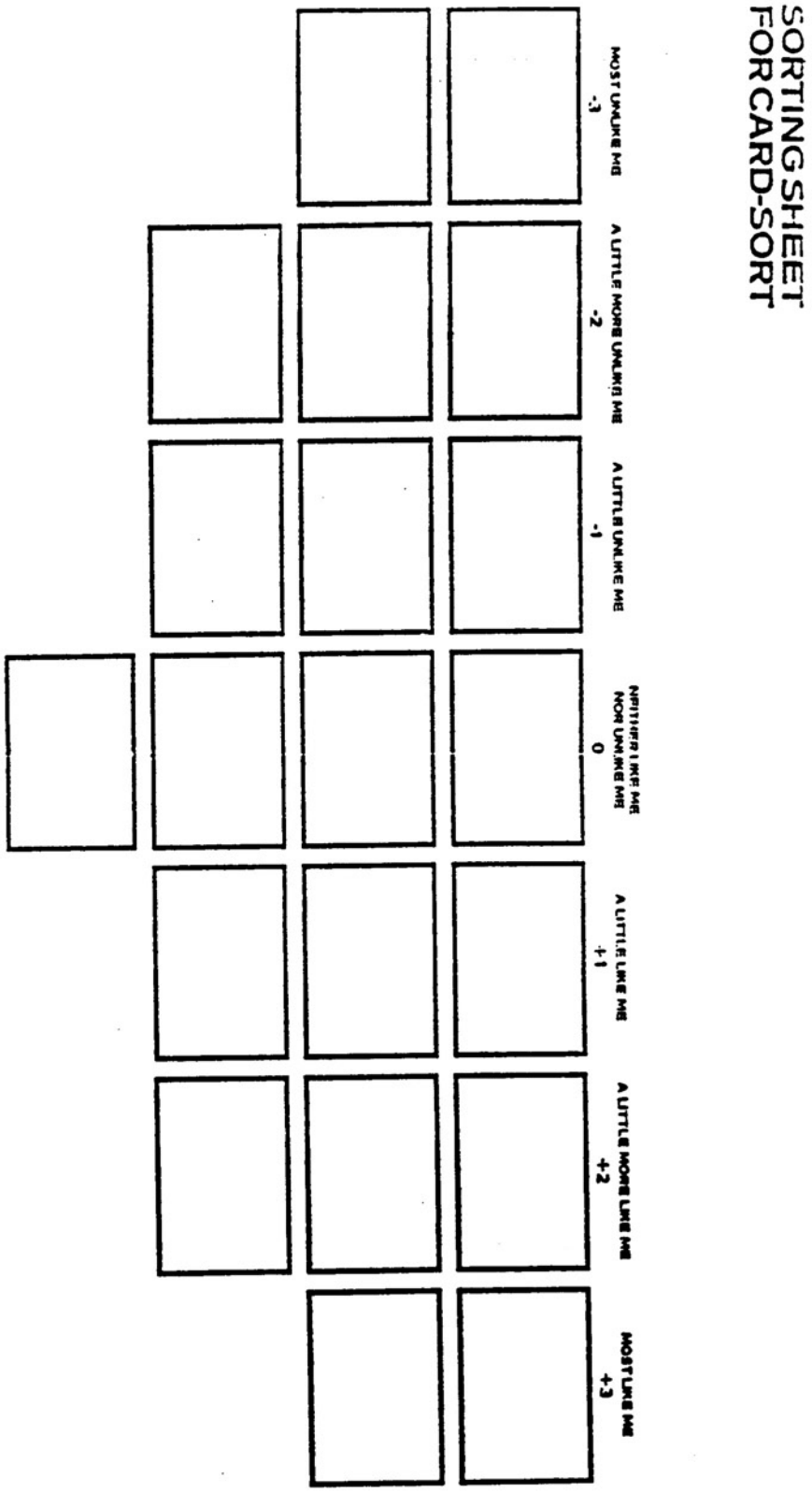

Table 1: Card Sort Items

Card 1: I try to accept my limits
Card 2: I take it out on others
Card 3: I try not to talk about my own problems
Card 4: I think about what others have done to cause my problems
Card 5: I say there is nothing wrong when friends ask
Card 6: I keep busy
Card 7: I've decided that it's not going to get me down
Card 8: I tell myself tomorrow will be different: this too shall pass
Card 9: I make sure to take time to rest
Card 10: I laugh and joke about my limits
Card 11: I let myself feel disappointed
Card 12: I figure out ways to manage so that I can still do the things I like to do
Card 13: I remember that I got myself into this situation
Card 14: I try to appreciate life more; everything becomes more special
Card 15: I divert my attention to other activities
Card 16: I call a friend
Card 17: I ask others for help
Card 18: I would like to be left alone
Card 19: I talk to my family
Card 20: I ask God to help get me through the day

Table 2: Correlations Between Flex and MPQ (Lester at al, 1992)

| MPQ Subscale | Corr. With Flex |
|---|---|
| Wellbeing | r = +.21 * |
| Social Potency | r = -.05 |
| Achievement | r = +.22 * |
| Social Closeness | r = -.10 |
| Stress Reaction | r = -.24 * |
| Alienation | r = -.24 * |
| Aggression | r = -.15 |
| Control | r = +.14 |
| Harmavoidance | r = -.20 * |
| Traditionalism | r = -.15 |
| Absorption | r = +.03 |
| Positive Affectivity | r = +.16 |
| Negative Affectivity | r = -.19 |
| Constraint | r = -.22 |

* indicates $p < .05$ (the correlation for Constraint was marginally significant at $p < .057$).

Table 3: Flex Scenario Factors (Lester et al, 1992)

Scenario = **Traffic Jam**

Factor 1: "Positive Outlook" Chronbach's Alpha = .63
- Card 2: Not taking it out on others
- Card 7: Its not going to get me down
- Card 15: I divert my attention
- Card 14: I Try to appreciate life more

Factor 2: "Social Support" Chronbach's Alpha = .59
- Card 3: I talk about it
- Card 16: I call a friend
- Card 17: I ask others for help
- Card 20: I ask God to help me through the day

Factor 3: "Acknowledging Own Limits" Chronbach's Alpha = .52
- Card 19: I talk to my family
- Card 1: I try to accept my limits
- Card 11: I don't let myself feel disappointed
- Card 6: I keep busy
- Card 18: I remember that this will pass

Scenario = **Moving**

Factor 1: "Social Support" Chronbach's Alpha = .72
- Card 11: I don't let myself feel disappointed
- Card 16: I call a friend
- Card 17: I ask others for help
- Card 12: I try to make time to do things I enjoy
- Card 13: I remember I got myself into this
- Card 19: I talk to my family
- Card 18: I don't want to be left alone

Factor 2: "Positive Outlook": Chronbach's Alpha = .68
- Card 10: I laugh and joke about my limits
- Card 8: I remember that this will pass
- Card 20: I ask God for help
- Card 14: I try to appreciate life more

Factor 3: "Acknowledging Own Limits" Chronbach's Alpha = .52
- Card 19: I talk to my family
- Card 1: I try to accept my limits
- Card 11: I don't let myself feel disappointed
- Card 6: I keep busy
- Card 8: I remember that this will pass

Scenario = **Argument with Friend**

Factor 1: "Diversion" Chronbach's Alpha = .52
- Card 12: I try to make time to do things I enjoy
- Card 15: I divert my attention
- Card 6: I keep busy
- Card 2: I don't take it out on others
- Card 8: I remember that this will pass

Factor 2: "Social Support" Chronbach's Alpha = .61
- Card 17: I ask others for help
- Card 19: I talk to my family
- Card 3: I talk about it
- Card 5: I say something is wrong if asked
- Card 16: I call a friend

Factor 3: No good factor

Scenario = **Friend Leaving**

Factor 1: "Social Support" Chronbach's Alpha = .69
- Card 5: I say something is wrong if asked
- Card 3: I talk about it
- Card 16: I call a friend
- Card 17: I ask others for help
- Card 14: I try to appreciate life more

Factor 2: "Positive Outlook" Chronbach's Alpha = .65
- Card 11: I don't let myself feel disappointed
- Card 7: Its not going to get me down
- Card 2: I don't take it out on others
- Card 1: I try to accept my limits
- Card 8: I remember that this will pass

Factor 3: "Acknowledging Own Limits" Chronbach's Alpha = .65
- Card 10: I laugh and joke about my limits
- Card 6: I try to stay busy
- Card 9: I make time to rest

Table 4: Correlations Between Flex Factors and WOC Subscales (Lester et al, 1992)

Scenario = **Moving**

| | WOC Subscale | | | | |
|---|---|---|---|---|---|
| | P | S | W | B | A |
| Flex Subscale | | | | | |
| Social Support | +.14 | +.19 | +.12 | -.07 | -.18 |
| Positive Outlook | +.12 | -.08 | +.03 | -.20 | -.09 |
| Knows Limits | +.16 | +.14 | -.11 | -.09 | -.07 |

Scenario = **Traffic**

| | WOC Subscale | | | | |
|---|---|---|---|---|---|
| | P | S | W | B | A |
| Flex Subscale | | | | | |
| Social Support | -.07 | -.02 | +.15 | -.15 | -.17 |
| Positive Outlook | +.09 | -.07 | -.20 | -.19 | -.20 |
| Knows Limits | -.07 | +.10 | -.05 | +.01 | -.19 |

Scenario = **Argument**

| | WOC Subscale | | | | |
|---|---|---|---|---|---|
| | P | S | W | B | A |
| Flex Subscale | | | | | |
| Social Support | **+.33** | **+.59** | -.06 | +.05 | **-.35** |
| Diversions | +.06 | -.07 | -.17 | **-.21** | **-.30** |

Scenario = **Friend Leaving**

| | WOC Subscale | | | | |
|---|---|---|---|---|---|
| | P | S | W | B | A |
| Flex Subscale | | | | | |
| Social Support | +.13 | **+.24** | +.05 | -.01 | -.19 |
| Positive Outlook | +.03 | -.18 | **-.30** | -.19 | **-.23** |
| Knows Limits | +.11 | +.002 | -.19 | -.08 | -.16 |

Notes:

WOC P scale = Problem Focused Coping
WOC S scale = Seeking Social Support
WOC W scale = Wishful Thinking
WOC B scale = Blame
WOC A scale = Avoidance

Correlations in BOLD face are significant at $p < .05$ or higher.

Table 5: Appraisal Questionnaire Scale Items

Challenge

1) It didn't bother me because I knew I could handle it.
4) I thought it was a challenge but not any reason for concern.
6) I immediately came up with the best way to deal with it and felt better about it.

Threat/Harm

5) I thought I would feel threatened.
7) I thought that how I dealt with the situation would affect my self-esteem.
9) I thought that there would be a possibility of some harm for me.

Finding Ways to Deal With Stress

3) I thought of lots of ways to deal with it.
10) I thought about different ways I could deal with the situation.

Controllability

8) I thought that there wasn't much I could do about the situation.
15) I thought that what I would do in the situation would not do much good.
16) The event was uncontrollable.
20) I would just wait it out.

Table 6: Means (SD) for Appraisal of Different Scenarios (Lester et al, 1992)

| | Scenarios | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | F(1,59) |
| Appraisal Factors | | | | | |
| Challenge | 3.5 (1.6) | 3.7 (1.5) | 5.0 (1.4) | 4.7 (1.6) | 17.82 p<.001 |
| Threat/Harm | 3.7 (1.2) | 4.0 (1.3) | 3.7 (1.1) | 3.3 (1.3) | 6.66 p<.001 |
| Ways to Deal | 5.0 (1.5) | 5.2 (1.2) | 5.7 (1.2) | 5.2 (1.5) | 4.66 p<.01 |
| Control | 4.6 (1.1) | 3.1 (1.2) | 2.9 (1.5) | 5.6 (1.2) | 68.24 p<.001 |

Scenario 1 = Friend Leaving
Scenario 2 = Argument with Friend
Scenario 3 = Moving
Scenario 4 = Traffic Jam

For Scenario 1: Challenge, $1 = 2 < 3 = 4$, $p < .05$.
For Scenario 2: Threat/Harm, $2 > 1 = 3 > 4$, $p < .05$.
For Scenario 3: Ways to Deal, $2 = 4 < 3 > 1$, $p < .05$.
For Scenario 4: Control, $4 > 1 > 3 = 2$, $p < .05$.

Table 7: Study Procedures Timeline

| | |
|---|---|
| Introduction and Informed Consent | 5 Min. |
| Coping Assessment | 50 Min. |
| Cognitive Tests and Questionnaires | 65 Min. |
| Rest Period | 5 Min. |
| Stressful Task | 35 Min. |
| Debriefing and Payment | 5 Min. |

Table 8: Changes in Blood Pressure and Heart Rate (Means and Standard Deviations

| Cardiovascular Parameter | Level Before Stress | Level After Stress | Statistical Signif. |
|---|---|---|---|
| Systolic BP | 108.6(11.9) | 119.7(13.8) | $p < .001$ |
| Diastolic BP | 66.5 (7.2) | 81.1 (8.4) | $p < .001$ |
| Heart Rate | 65.5 (7.5) | 76.6 (9.6) | $p < .001$ |

Table 9: Changes in Mood (Means and Standard Deviations)

| Mood Variable | Level Before Stress | Level After Stress | Statistical Signif. |
|---|---|---|---|
| Fear | .29 (.46) | .60 (.65) | $p < .001$ |
| Discomfort | 1.5 (.80) | 2.3 (.85) | $p < .001$ |
| Tension | .63 (.48) | .58 (.54) | n.s. |
| Somatic | .10 (.35) | .07 (.23) | n.s. |

Table 10: Coping Flexibility Variables for Men and Women (Means and Standard Deviations)

| Flexibility Variable | Whole Group | Men Only | Women Only | Stat. Signif. |
|---|---|---|---|---|
| The Flex | 2.29(.38) | 2.40(.37) | 2.21(.36) | $p < .04$ |
| WOC flex | 1.21(.25) | 1.26(.23) | 1.18(.26) | n.s. |
| Prob flex | 1.15(.32) | 1.23(.30) | 1.08(.33) | n.s. |
| Soc flex | 1.15(.37) | 1.18(.36) | 1.12(.37) | n.s. |
| Wish flex | 1.31(.38) | 1.29(.39) | 1.32(.38) | n.s. |
| Blame flex | 1.42(.40) | 1.45(.39) | 1.40(.41) | n.s. |
| Avoid flex | 1.05(.30) | 1.17(.26) | 0.96(.29) | $p < .004$ |

Table 11: Correlations Between Flexibility Variables

| | The Flex | WOC flex | Prob flex | Soc flex | Wish flex | Blame flex | Avoid flex |
|---|---|---|---|---|---|---|---|
| The Flex | | r=.37 p<.001 | r=.33 p<.003 | r=.19 p<.06 | r=.17 p<.09 | r=.22 p<.04 | r=.46 p<.001 |
| WOC flex | | | r=.86 p<.001 | r=.65 p<.001 | r=.69 p<.001 | r=.67 p<.001 | r=.73 p<.001 |
| Prob flex | | | | r=.53 p<.001 | r=.59 p<.001 | r=.38 p<.001 | r=.66 p<.001 |
| Soc flex | | | | | r=.18 p<.08 | r=.22 p<.04 | r=.42 p<.001 |
| Wish flex | | | | | | r=.36 p<.002 | r=.30 p<.007 |
| Blame flex | | | | | | | r=.35 p<.002 |
| Avoid flex | | | | | | | |

Table 12: Gender Differences in Selected Variables (Mean and Standard Deviations)

| Variables | Whole Group | Men Only | Women Only | Stat. Signif. |
|---|---|---|---|---|
| Self Esteem | 33.7(3.9) | 33.1(3.4) | 34.0(4.3) | n.s. |
| Neuro-ticism | 8.5(4.2) | 8.6(4.3) | 8.5(4.3) | n.s. |
| Intro/ Extrover-sion (hi) | 12.2(3.8) | 12.2(4.0) | 12.1(3.7) | n.s. |
| Figural Adaptive flex | 16.7(6.9) | 19.1(7.1) | 14.7(6.1) | $p < .01$ |
| Semantic Spont-anious flex | 4.1(1.7) | 4.4(1.7) | 3.9(1.7) | n.s. |
| Semantic Redefin-ition | 4.5(1.9) | 5.4(1.8) | 3.9(1.8) | $p < .001$ |

Table 13: Correlations Between Coping Flexibility and Selected Variables

| Variables | The Flex | WOC flex | Prob flex | Soc flex | Wish flex | Blame flex | Avoid flex |
|---|---|---|---|---|---|---|---|
| Age | +.09 | -.10 | -.11 | +.10 | -.11 | -.07 | -.18 |
| Self Esteem | -.14 | -.08 | -.12 | +.02 | -.02 | -.06 | -.10 |
| Neuroticism | +.18 | -.01 | +.04 | +.03 | **-.21** | +.01 | +.12 |
| Intro/Extroversion(hi) | +.04 | +.08 | +.00 | +.01 | +.17 | +.10 | -.02 |
| Figural Adaptive flex | **+.43** | **+.35** | **+.35** | +.12 | +.17 | +.21 | **+.42** |
| Semantic Spontanious flex | -.12 | -.07 | -.02 | -.07 | -.06 | -.05 | -.03 |
| Semantic Redefinition | +.12 | +.03 | +.08 | +.12 | -.12 | -.05 | +.11 |

Note: Significant Correlations Indicated in Bold Face Type

Table 14a: Gender Differences in Appraisal Before Stroop

| Appraisal Factor | Whole Group | Men Only | Women Only | Stat. Signif. |
|---|---|---|---|---|
| Challenge | 2.9(1.1) | 2.8(.94) | 3.0(1.2) | n.s. |
| Threat/ Harm | 2.1(1.1) | 2.4(1.2) | 1.9(.89) | n.s. |
| Ways to Deal | 3.3(1.5) | 3.4(1.7) | 3.2(1.4) | n.s. |
| Control | 3.6(1.1) | 3.8(.96) | 3.4(1.1) | n.s. |

Table 14b: Gender Differences in Appraisal After Stroop

| Appraisal Factor | Whole Group | Men Only | Women Only | Stat. Signif. |
|---|---|---|---|---|
| Challenge | 3.1(1.2) | 3.3(1.2) | 3.0(1.3) | n.s. |
| Threat/ Harm | 2.0(1.1) | 2.3(1.4) | 1.8(.75) | n.s. |
| Ways to Deal | 3.6(1.6) | 3.6(1.8) | 3.6(1.4) | n.s. |
| Control | 3.9(.88) | 4.0(.89) | 3.9(.89) | n.s. |

Table 15: Correlations Between Flexibility Variables and Chronic Stress/Mediators

| Chronic Stress Variable | The Flex | WOC flex | Prob flex | Soc flex | Wish flex | Blame flex | Avoid flex |
|---|---|---|---|---|---|---|---|
| Percieved Stress | +.25 | +.06 | +.04 | -.02 | +.02 | +.04 | +.14 |
| Life Change Adjustment | -.01 | +.04 | -.01 | +.05 | +.09 | +.03 | -.04 |
| Hassles Severity | +.10 | +.19 | +.16 | +.03 | +.17 | +.10 | +.25 |
| Social Support | -.25 | -.09 | -.16 | +.02 | +.03 | -.03 | -.25 |
| SCL: Somatic | +.09 | -.03 | -.03 | -.14 | +.12 | -.08 | +.03 |
| SCL: Concentrat'n | +.17 | +.15 | +.16 | -.00 | +.13 | +.11 | +.17 |
| SCL: Interpersn'l | +.11 | -.10 | -.04 | -.08 | -.23 | -.02 | +.10 |
| SCL: Depression | +.23 | -.01 | +.00 | -.02 | -.14 | +.05 | +.07 |
| SCL: Anxiety | +.01 | -.13 | -.11 | -.11 | -.12 | -.09 | -.01 |
| SCL: Anger | +.20 | -.00 | +.01 | -.16 | -.04 | +.10 | +.10 |
| SCL: Fear | +.09 | +.04 | +.02 | -.14 | +.06 | +.10 | +.09 |
| SCL: Suspicion | +.08 | -.07 | -.03 | +.01 | -.15 | -.14 | +.11 |
| SCL: Alienation | +.12 | -.03 | -.03 | +.01 | -.14 | -.07 | +.16 |
| SCL: Total | +.12 | -.17 | -.12 | -.13 | -.22 | -.12 | +.03 |
| Perceived Control #4 | +.15 | -.23 | -.13 | -.30 | -.13 | -.17 | -.07 |

Table 16: Means (SDs) of Selected Variables

| Variable | Whole Group | Men Only | Women Only |
|---|---|---|---|
| Perceived Stress | 23.8(5.8) | 22.7(4.4) | 24.6(6.6) |
| Life Change Adjustment | 686.9(458.7) | 570.1(320.0) | 769.1(523.9) |
| Hassles Severity | 43.2(44.6) | 48.5(58.3) | 39.5(32.3) |
| SCL: Somatic | 17.0(5.9) | 16.9(6.0) | 17.1(5.9) |
| SCL: Concentrat'n | 17.5(5.2) | 18.2(5.8) | 17.0(4.7) |
| SCL: Interpersn'l | 14.4(4.1) | 14.3(4.8) | 14.4(3.7) |
| SCL: Depression | 20.9(7.1) | 21.1(7.0) | 20.8(7.2) |
| SCL: Anxiety | 13.2(3.8) | 13.3(4.2) | 13.1(3.4) |
| SCL: Anger | 8.6(2.4) | 8.8(2.3) | 8.5(2.5) |
| SCL: Fear | 7.8(2.0) | 7.7(1.0) | 7.9(2.4) |
| SCL: Suspicion | 9.3(3.1) | 9.1(3.2) | 9.5(3.1) |
| SCL: Alienation | 12.0(2.7) | 12.2(2.9) | 11.9(2.5) |
| SCL: Total | 29.0(15.5) | 29.6(15.9) | 28.6(15.4) |

## Appendix 1: Flex Card Sorting Scenarios

Traffic Jam:

"Its a hot summer day and you are driving home from a long day at work or school. The air conditioning in your car is broken and you haven't had the time or money to get it fixed. Traffic seems to be slower than usual and then it stops completely. You hear on the radio that a truck has spilled its load. There are no injuries but the highway is closed so that the clean-up crew can do its work. There's nothing you can do. You're stuck on the road until they open it again".

"Please indicate how you would cope with this situation while it is taking place and how you would cope with your feelings once you got home ".

Moving:

"You've decided to take a new job or start a new school. In order to do this you will need to move. There is a great deal to do, you have to pack up all your things and get them moved, change your address and get everything done in time. You need to say goodbye to your old neighborhood and maybe some friends and family as well. You may even need to arrange for your children to change schools. When you get to the new location there is unpacking to be done and you need to adjust to all the new people and surroundings".

"Please indicate how you would cope with this situation. Think about the time before, during and after the move".

Friend Leaving:

"You are facing a long separation from someone you love. They have decided to move away to accept a job in another part of the country. You have no control over their decision and you know that you won't see them for quite a while. This person has been very important to you and you will feel lonely not having them around. It's going to take a long time to adjust to their absence".

"Please indicate how you would cope with this situation".

Argument with Friend:

"You've just had an argument with a close friend. You didn't mean for it to happen but the feelings had been building up for a while. The two of you said things you shouldn't have and you think you've hurt your friend's feelings. You know that sometimes even the best of friends argue but you wish it wouldn't have happened".

"Please indicate how you would cope with this situation".

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MEDICAL PSYCHOLOGY

TEACHING HOSPITALS
WALTER REED ARMY MEDICAL CENTER
NAVAL HOSPITAL BETHESDA
MALCOLM GROW AIR FORCE MEDICAL CENTER
WILFORD HALL AIR FORCE MEDICAL CENTER

# CONSENT FOR RESEARCH PARTICIPATION

Please Read Carefully

Title of Study: Coping flexibility: performance and correlates. Part of protocol RO7265: Conditioned reactivity in Vietnam Veterans.

We are studying the various ways that people cope with the things that happen to them. We are also interested in other parts of personality and how they might influence coping. We are asking you to help us by participating in this study. You will be scheduled for one test session which will last approximately 3 hours. We will pay you $20 for participating in this session.

We are interested in getting to know you and evaluating some of attitudes, beliefs and personal characteristics. In order to accomplish this, we will ask you a number of questions concerning your background and how you react to various situations. We will also ask you to think about certain situations and sort some cards describing responses you may have.

During the time you are in the laboratory you will be filling out questionnaires and doing a mental performance task. Your blood pressure and heart rate will also be monitored. This procedure is similar to having your blood pressure and heart rate taken in a doctor's office but will be repeated at 2-3 minute intervals at certain times throughout the session. Possible inconvenience or discomfort from this study involves recalling stressful events that may be upsetting. Having your blood pressure and heart rate monitored may cause a temporary tingling in your arm. If at any time during the study you should choose not to participate in some part of the study, you may do so without penalty.

If you decide to participate, you may withdraw or discontinue participation at any time for any reason without prejudice. If you have any questions, we expect you to ask us.

Research records of your participation in this study will be maintained by the principal investigator. Confidentiality is protected to the best extent possible under law. Your identity will not be traceable by anyone other than the principal investigator. When you complete the session and we have coded your data or you have withdrawn form the study, your name will be deleted from the records and no one will be able to trace your

data. The data will be published in scientific journals but will not be published in any manner that can identify you.

This study does not entail any physical or mental risk beyond those described above. If, however you should become uncomfortable during the study, sufficiently uncomfortable that you would like to end the session, tell us. We do not expect this to occur, but if for any reason, you feel that continuing would constitute a hardship, please tell us and we will end the session.

If you believe that you have suffered any injury or illness as a result of participating in this research, please contact Research Administration, (301) 295-3303, at the University. This office can review the matter with you and may be able to identify resources available to you. Information about possible judicial avenues of compensation is available from the University's Legal Counsel at (301) 295-3028.

If you desire additional information about this experiment, either about the rationale for it or its findings, or about your rights as a participant, you may call the Department of Medical Psychology, (301) 295-3270, to obtain information about it. In this way, you can make your participation in our research a more informative, educational experience. We welcome your comments and suggestion, and appreciate your willingness to help us.

YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE. YOUR SIGNATURE INDICATES THAT, HAVING READ THE ABOVE INFORMATION, YOU HAVE DECIDED TO PARTICIPATE.

Date signed

Subject initials

Signature of subject

Social Security #

Subject printed name/Status

I was present during the explanation referred to above, as well as during the volunteer's opportunity to ask questions. I hereby witness the volunteer's signature.

Witness signature

Investigator or designee signature

Printed name/SSN

Printed name/SSN

## Background Questionnaire

1. Where did you grow up? _____

2. How long have you lived in your present residence?_____

3. Do your rent or own? _____

   Type of residence:
   ____ Apartment
   ____ Single Family Home
   ____ Townhome
   ____ Duplex
   ____ Other _____

4. How many people live in your residence? _____

5. When did you last move? _____

6. How far did you have to move? _____

7. What is your age? _____

8. At what age did you receive your drivers license?_____

9. What is your current marital status?
   ____ Single
   ____ Married How Long?____
   ____ Separated
   ____ Divorced How Long?
   ____ Widowed

10. If you are married, is this your first marriage? _____

11. What is your current family size (including yourself)? _____

12. What was your family size growing up? _____

13. Number of brothers and sisters? _____

14. Do you have family members living in the area, and if so what relationship are they to you?

    _____

    _____

15. Your highest educational level?
    ____ Grammar School
    ____ High School
    ____ Some College
    ____ College Degree
    ____ Graduate Degree
    ____ Other (specify)
    _____

16. Your spouse's highest educational level?
____ Grammar School
____ High School
____ Some College
____ College Degree
____ Graduate Degree
____ Other (specify)
_____

17. Your mother's highest educational level?
____ Grammar School
____ High School
____ Some College
____ College Degree
____ Graduate Degree
____ Other (specify)
_____

18. Your father's highest educational level?
____ Grammar School
____ High School
____ Some College
____ College Degree
____ Graduate Degree
____ Other (specify)
_____

19. Approximate annual income:
____ under $10,000/year
____ 10,000 to 20,000
____ 20,000 to 30,000
____ 30,000 to 40,000
____ 40,000 to 50,000
____ over $50,000

20. Your occupation _____

21. Spouse's occupation _____

FOR WOMEN ONLY:

1. What was the data of the first day of your last menstrual cycle?

_____ Today's Date _____

2. Are you currently taking oral contraceptives? _____

The following is a list of possible ways of dealing with a stressful situation. Each of the thoughts or behaviors listed may be like the ways in which people feel and behave when they experience stress. Please think about a major stressful event which has occurred in your life DURING THE PAST YEAR. Please list it here:

_____

We are interested in the degree to which you have felt or used each of the thoughts or behaviors described in these items to deal with this situation. Please check the appropriate column to indicate whether the thought or behavior was one that you: never used or felt, rarely used or felt, sometimes used or felt, or regularly used or felt.

| THOUGHTS/BEHAVIORS | never used | rarely used | sometimes used | regularly used |
|---|---|---|---|---|
| 1. Bargained or compromised to get something positive from the situation. | | | | |
| 2. Talked to someone to find out about the situation. | | | | |
| 3. Blamed yourself. | | | | |
| 4. Concentrated on something good that could come out of the whole thing. | | | | |
| 5. Criticized or lectured yourself. | | | | |
| 6. Tried not to burn my bridges behind me, but left things open somewhat. | | | | |
| 7. Hoped a miracle would happen. | | | | |
| 8. Asked someone I respected for advice and followed it. | | | | |
| 9. Kept others from knowing how bad things were. | | | | |
| 10. Talked to someone about how I was feeling. | | | | |
| 11. Stood my ground and fought for what I wanted. | | | | |
| 12. Just took things one step at a time. | | | | |
| 13. I knew what had to be done, so I doubled my efforts and tried harder to make things work. | | | | |

| THOUGHTS/BEHAVIORS | never used | rarely used | sometimes used | regularly used |
|---|---|---|---|---|
| 14. Refused to believe that it had happened. | | | | |
| 15. Came up with a couple of different solutions to the problem. | | | | |
| 16. Wished I were a stronger person--more optimistic and forceful. | | | | |
| 17. Accepted my strong feelings, but didn't let them interfere with other things too much. | | | | |
| 18. Wished that I could change what had happened. | | | | |
| 19. Wished that I could change the way that I felt. | | | | |
| 20. Changed someting about myself so that I could deal with the situation better. | | | | |
| 21. Daydreamed or imagined a better time or place than the one I was in. | | | | |
| 22. Had fantasies or wished about how things might turn out. | | | | |
| 23. Thought about fantastic or unreal things (like the perfect revenge or finding a million dollars) that made me feel better. | | | | |
| 24. Wished that the situation would go away or somehow be finished. | | | | |
| 25. Went on as if nothing had happened. | | | | |
| 26. Felt bad that I couldn't avoid the problem. | | | | |
| 27. Kept my feelings to myself. | | | | |
| 28. Slept more than usual. | | | | |
| 29. Got mad at the people or things that caused the problem. | | | | |
| 30. Accepted sympathy and understanding from someone. | | | | |

| THOUGHTS/BEHAVIORS | never used | rarely used | sometimes used | regularly used |
|---|---|---|---|---|
| 31. Tried to forget the whole thing. | | | | |
| 32. Got professional help and did what they recommended. | | | | |
| 33. Changed or grew as a person in a good way. | | | | |
| 34. Made a plan of action and followed it. | | | | |
| 35. Accepted the next best thing that I wanted. | | | | |
| 36. Realized that you brought the problem on yourself. | | | | |
| 37. Came out of the experience better than when I went in. | | | | |
| 38. Talked to someone who could do something concrete about the problem. | | | | |
| 39. Tried to make myself feel better by eating, drinking, smoking, taking medication, etc. | | | | |
| 40. Tried not to act too hastily or follow my own hunch. | | | | |
| 41. Changed something so things would turn out all right. | | | | |
| 42. Avoided being with people in general. | | | | |

Please Indicate whether you "Strongly Agree" "Agree" "Disagree", or "Strongly Disagree" with the following items

| | SA | A | D | SD |
|---|---|---|---|---|
| 1. On the whole, I am satisfied with myself. | ___ | ___ | ___ | ___ |
| 2. At times I think I am no good at all. | ___ | ___ | ___ | ___ |
| 3. I feel that I have a number of good qualities. | ___ | ___ | ___ | ___ |
| 4. I am able to do things as well as most other people. | ___ | ___ | ___ | ___ |
| 5. I feel I do not have much to be proud of. | ___ | ___ | ___ | ___ |
| 6. I certainly feel useless at times. | ___ | ___ | ___ | ___ |
| 7. I feel that I am a person of worth, at least on an equal plane with others | ___ | ___ | ___ | ___ |
| 8. I wish I could have more respect for myself. | ___ | ___ | ___ | ___ |
| 9. All in all, I am inclined to feel that I am a failure. | ___ | ___ | ___ | ___ |
| 10. I take a positive attitude toward myself. | ___ | ___ | ___ | ___ |

In each of the following items you will be presented with a problem which may be solved by using a part of one of the objects given as choices. The solution may be one requiring ingenuity. Place an X through the letter corresponding to the object which you think has a part which would best solve the problem.

For example:

To start a fire

A - a fountain pen
B - an onion
X - a pocket watch
D - a light bulb
E - a bowling ball

The correct answer is "C" and an X has been marked on "C." This is correct because you could use the crystal from a pocket watch as a burning glass to start a fire.

The test consists of two parts. You will have 5 minutes working time for each part. Are there any questions?

STOP HERE. WAIT FOR FURTHER INSTRUCTIONS.

Part 1 (5 minutes)

1. To draw a perfect circle with a pencil

   A - a spoon
   B - a plastic table cloth
   C - a sweater
   D - a spark plug
   E - a rubber boot

2. To make a needle

   A - a cabbage
   B - a splice
   C - a steak
   D - a paper box
   E - a fish

3. To stop severe bleeding

   A - a razor blade
   B - a lima bean
   C - a light bulb
   D - a shoe
   E - a case of beer

4. To cut cheese

   A - a guitar
   B - a thermos bottle
   C - a hammer
   D - a pair of trousers
   E - a bed roll

5. To remove old wallpaper from a wall

   A - a pillow
   B - putty
   C - a fire
   D - a chair
   E - a window

6. To tack a rug to a floor

   A - a cup of coffee
   B - a golf club
   C - a pair of trousers
   D - a rifle bullet
   E - a pencil

7. To tie two things together

   A - a doughnut
   B - a catalogue
   C - a comb
   D - a bookshelf
   E - a piano

8. To repair a leak in an inner tube

   A - a pencil
   B - a magazine
   C - a fountain pen
   D - a carpet tack
   E - Scotch tape

9. To lubricate a friction point

   A - water
   B - a pencil
   C - bottle of ink
   D - an eraser
   E - a dictionary

10. To sweep a floor

    A - a tree
    B - a 2-inch paint brush
    C - a sock
    D - a medicine cabinet
    E - a brief case

STOP HERE. WAIT FOR FURTHER INSTRUCTIONS.

Part 2 (5 minutes)

11. To use for dusting fingerprints

A - a .45 cartridge
B - a cake of soap
C - a light switch
D - a book
E - a cigarette

12. To use for tying a small package

A - a manhole cover
B - a pliers
C - a light bulb
D - a key
E - a match book

13. To make eyes for a rag doll

A - a paper slip
B - a comb
C - a pair of glasses
D - a box of salt
E - a shirt

14. To fix a hydraulic brake system

A - a razor blade
B - a bottle of milk
C - an automobile tire
D - a sewing machine
E - a tennis racket

15. To keep people from slipping on an icy sidewalk

A - a Sunday newspaper
B - a rope
C - a bottle of beer
D - a potted palm
E - a mirror

16. To get something out of reach

A - an ashtray
B - a typewriter
C - a tree
D - a pencil sharpener
E - a thermos bottle

17. To use as a hose

A - a tree
B - a cigarette
C - a shirt
D - a bicycle
E - eyeglasses

18. To use as a funnel for filling a pill bottle

A - a chair
B - a spoon
C - eyeglasses
D - a book
E - a glass tumbler

19. To stuff a cushion

A - pencils
B - people
C - rocks
D - cooked geese
E - golf balls

20. To make a swab

A - cigarette lighter
B - a tree trunk
C - an inner tube
D - a hairpin
E - a lemon

STOP HERE. WAIT FOR FURTHER INSTRUCTIONS.

This is a test of your ability to plan air maneuvers. Assume that you are a sky-writing pilot and must plan how to "write" letter combinations in the most efficient manner. In the problems that follow, you are to find the shortest, simplest, and most direct path. In order to do each problem correctly, you must conform to the following rules:

1. Begin in the position labeled START;
2. Complete the first letter before going to the second;
3. Complete the second letter so that your plane is in the position labeled FINISH;
4. Remember that your plane cannot turn more sharply than is shown in the small diagram below.

Figure I and Figure II below show two maneuvers for writing L Z.

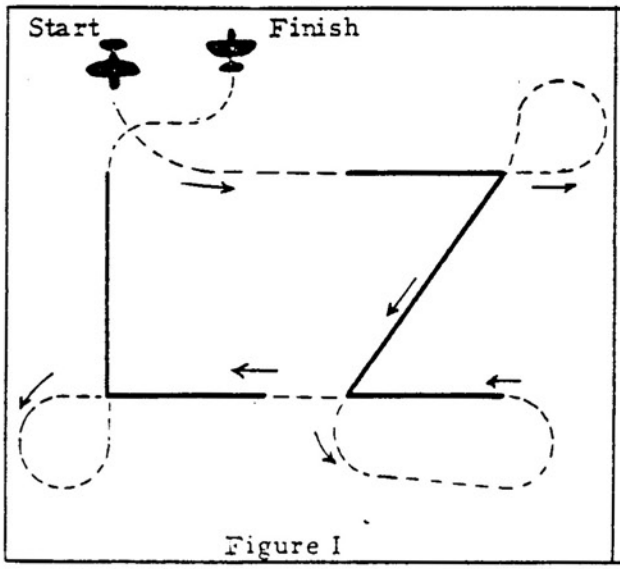



Figure I

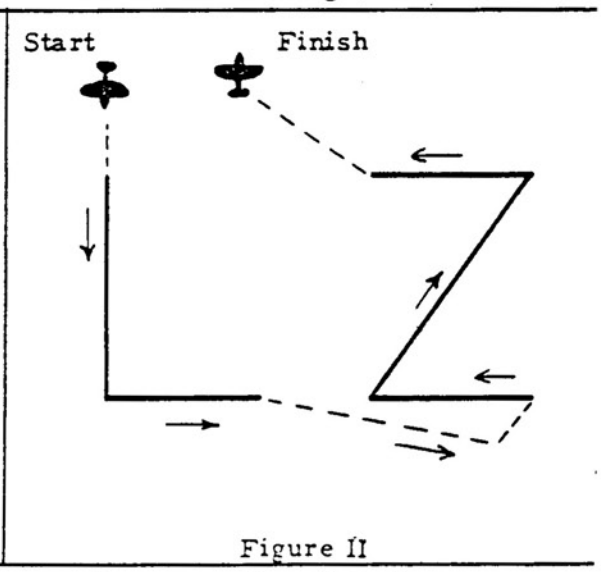



Figure II

Figure I is not the correct path, because it goes against Rule 2, above, by starting on the second letter. Figure II is not the correct path because the turn at the lower right is sharper than is allowed by Rule 4, as illustrated.

GO ON TO THE NEXT PAGE

Look at Figure III and Figure IV below:

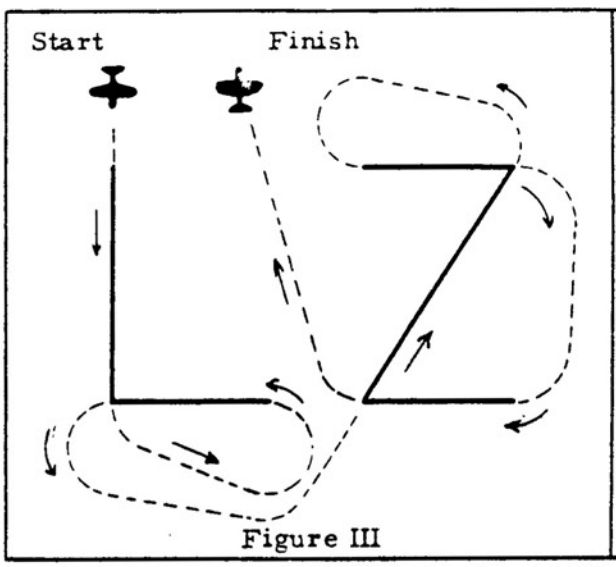



Figure III

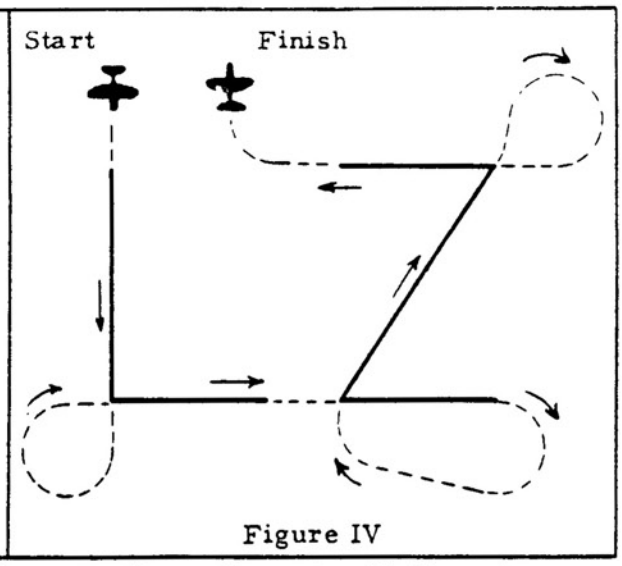
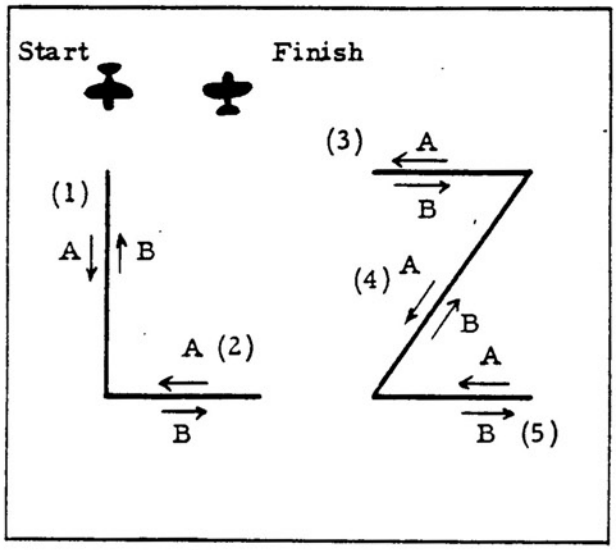



Figure IV

The path indicated in Figure III apparently conforms to all the rules given above; however, it is not the best solution because it is not the shortest, simplest, most direct path. The path shown in Figure IV also conforms to all the rules, and is also much more simple and direct than that of Figure III. Therefore, the path shown in Figure IV is the correct maneuver.

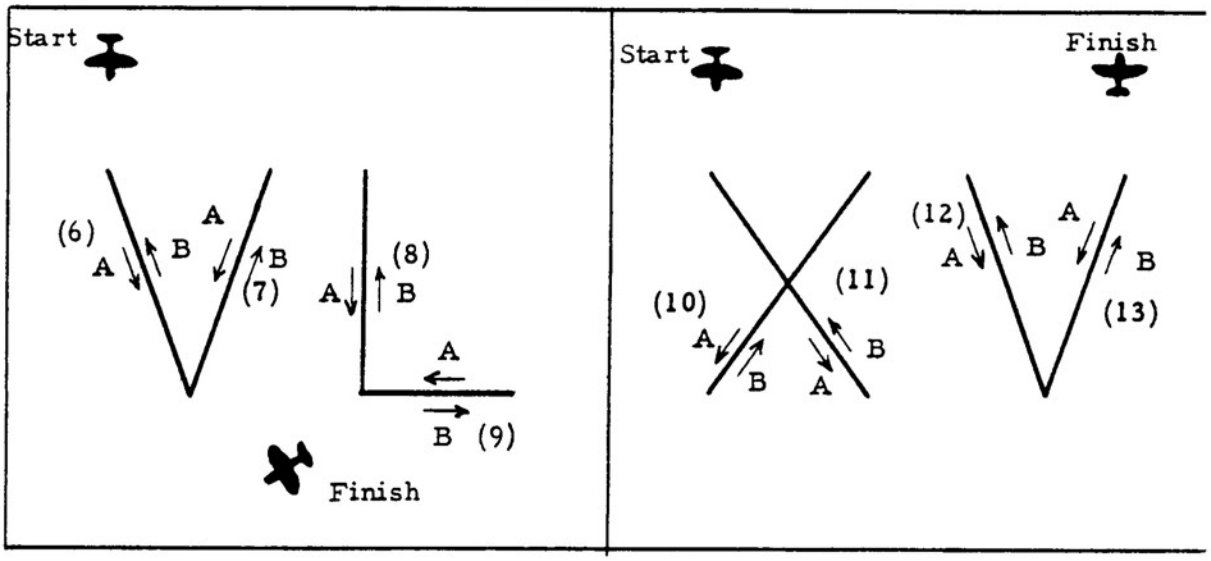
Look at the letter combination L Z below. In flying the correct maneuver, as shown in Figure IV, you will fly over several numbered lines, but not necessarily in the usual "numerical order." For each numbered line you are to indicate the direction in which you should fly by putting an X through the correct letter, either A or B.



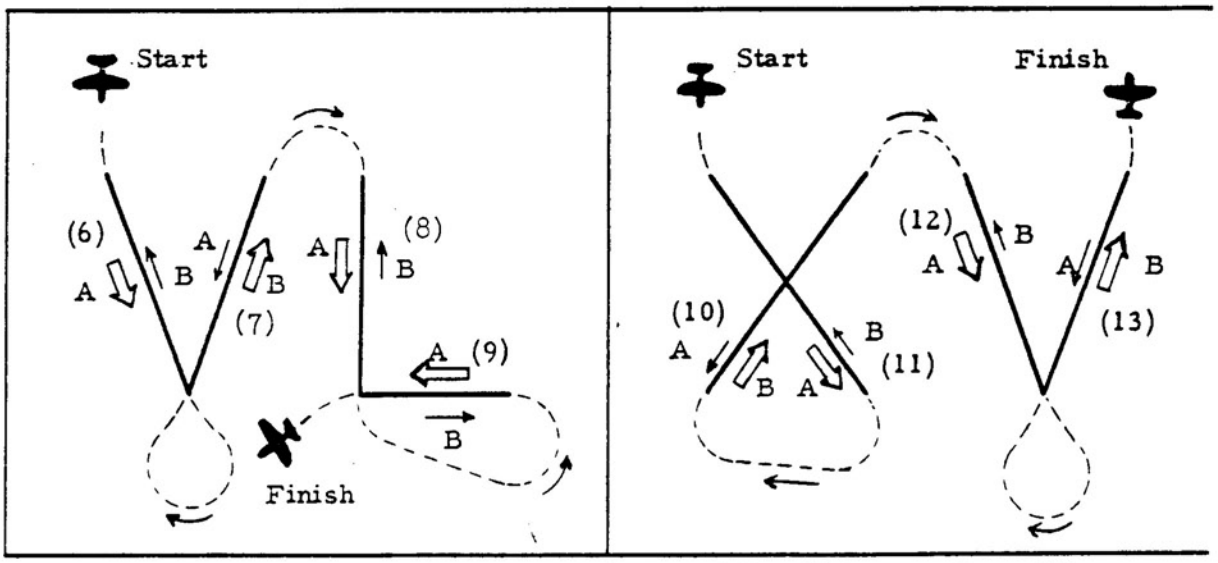

By referring to Figure IV, you can see that the correct path has been taken if you have put an X through the following letters: line 1, A; 2, B; 3, A; 4, B; 5, B.

GO ON TO THE NEXT PAGE

Now work on lines 6 through 13, using the letter combinations V L and X V and putting Xs through the appropriate letters.



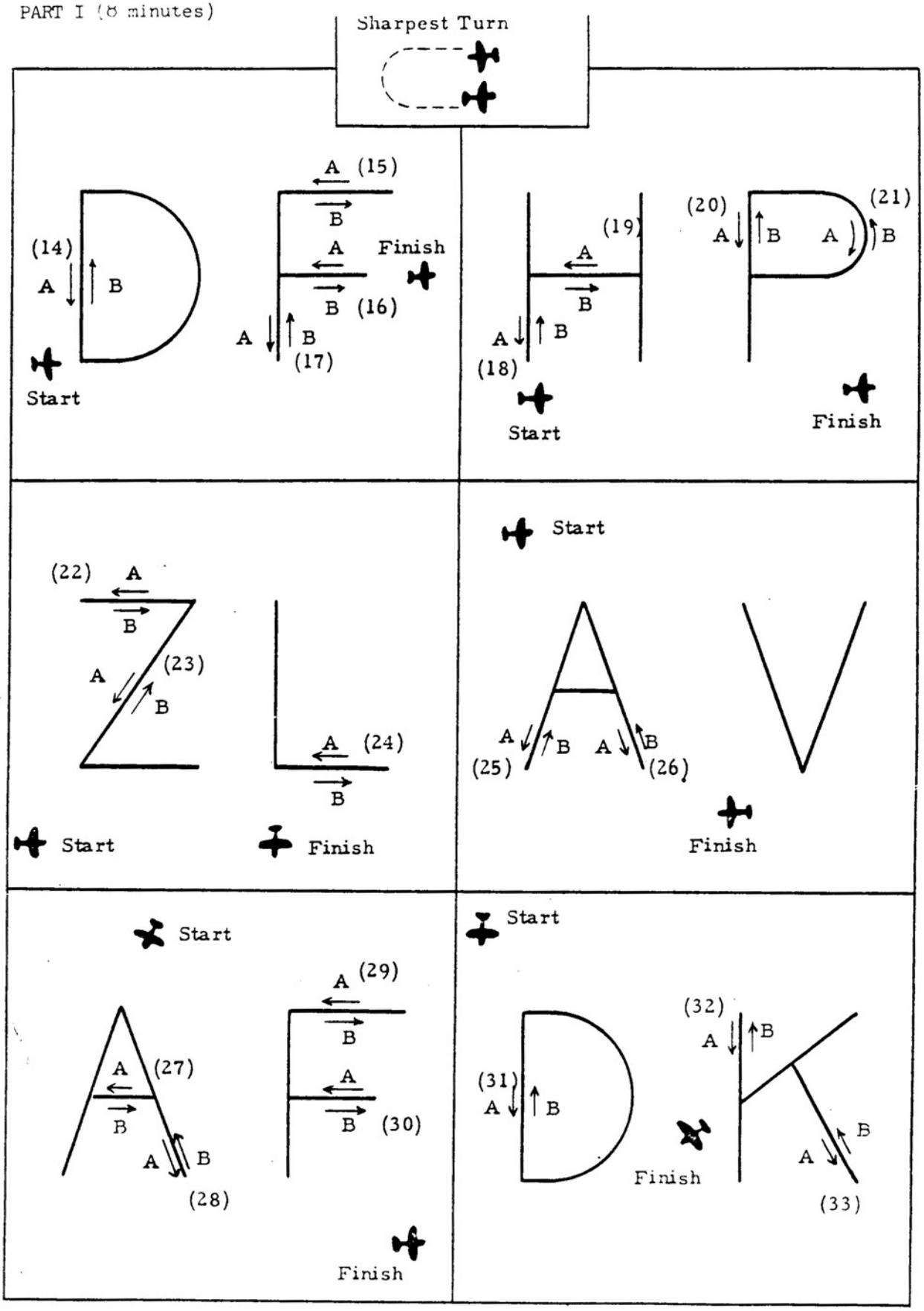

The correct answers for lines 6 to 13 are shown below. Compare them with your solutions. The large arrows indicate the proper direction past each numbered point. Check your answers and correct any mistakes you may have made. The correct answers are: Line 6, A; 7, B; 8, A; 9, A; 10, B; 11, A; 12, A; 13, B.

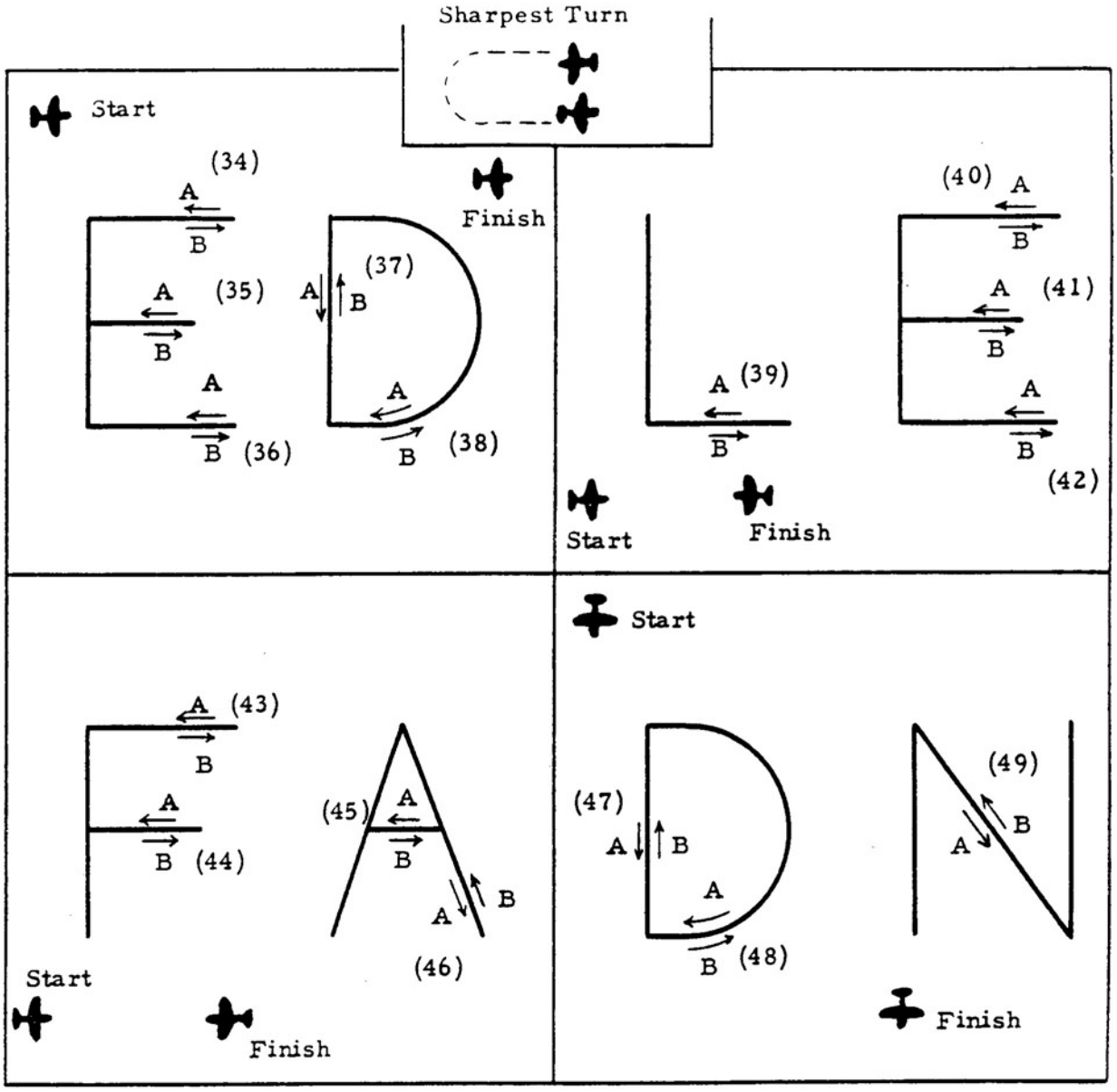



There are two parts to this test, each containing 36 items. You will have 8 minutes per part. Work rapidly; if you have difficulty with one maneuver, leave it and go on to the next one, returning if time permits. You will be told when approximately half the allowed time has elapsed. Are there any questions?

DO NOT TURN THIS PAGE UNTIL ASKED TO DO SO

PART I (8 minutes)






DO NOT GO ON TO THE NEXT PAGE UNTIL ASKED TO DO SO.

STOP

## Object Naming Test

In this test you will be given the name of a class of objects. Your task is to write down, in the time allowed, the names of as many objects in the class as you can.

EXAMPLE: You are given a class defined as MINERAL.

You might write down: iron

uranium

granite

copper

Write as quickly as you can, but be sure that the names you write belong in the class of objects or things given. Make your letters as legible as possible.

There are two parts to this test. You will have 2 minutes for each part.

Are there any questions?

DO NOT TURN THIS PAGE UNTIL ASKED TO DO SO

PART I (2 minutes)

FLUIDS (all matter that is not living or solid

DO NOT TURN THIS PAGE UNTIL ASKED TO DO SO

PART II (2 minutes)

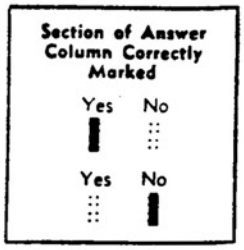
PLANTS (all living things that are not animals)

DO NOT GO BACK TO PART I AND
DO NOT GO ON TO ANY OTHER TEST UNTIL ASKED TO DO SO.

## INSTRUCTIONS

Here are some questions regarding the way you behave, feel and act. After each question is a space for answering "Yes," or "No."

Try and decide whether "Yes," or "No" represents your usual way of acting or feeling. Then blacken in the space under the column headed "Yes" or "No."




Work quickly, and don't spend too much time over any question; we want your first reaction, not a long drawn-out thought process. The whole questionnaire shouldn't take more than a few minutes. Be sure not to omit any questions. Now turn the page over and go ahead. Work quickly, and remember to answer every question. There are no right or wrong answers, and this isn't a test of intelligence or ability, but simply a measure of the way you behave.

1. Do you often long for excitement? . . . . . Yes No

2. Do you often need understanding friends to cheer you up? . . . . . Yes No

3. Are you usually carefree? . . . . . Yes No

4. Do you find it very hard to take no for an answer? . . . Yes No

5. Do you stop and think things over before doing anything? . . . . . Yes No

6. If you say you will do something do you always keep your promise, no matter how inconvenient it might be to do so? . . . . . Yes No

7. Does your mood often go up and down? . . . . . Yes No

8. Do you generally do and say things quickly without stopping to think? . . . . . Yes No

9. Do you ever feel "just miserable" for no good reason? Yes No

10. Would you do almost anything for a dare? . . . . . Yes No

11. Do you suddenly feel shy when you want to talk to an attractive stranger? . . . . . Yes No

12. Once in a while do you lose your temper and get angry? . . . . . Yes No

13. Do you often do things on the spur of the moment? . . . Yes No

14. Do you often worry about things you should not have done or said? . . . . . Yes No

15. Generally do you prefer reading to meeting people? . . Yes No

16. Are your feelings rather easily hurt? . . . . . Yes No

17. Do you like going out a lot? . . . . . Yes No

18. Do you occasionally have thoughts and ideas that you would not like other people to know about? . . . . . Yes No

19. Are you sometimes bubbling over with energy and sometimes very sluggish? . . . . . Yes No

20. Do you prefer to have few but special friends? . . . . . Yes No

21. Do you daydream a lot? . . . . . Yes No

22. When people shout at you, do you shout back? . . . . . Yes No

23. Are you often troubled about feelings of guilt? . . . . . Yes No

24. Are all your habits good and desirable ones? . . . . . Yes No

25. Can you usually let yourself go and enjoy yourself a lot at a lively party? . . . . . Yes No

26. Would you call yourself tense or "highly-strung"? . . . Yes No

27. Do other people think of you as being very lively? . . . Yes No

28. After you have done something important, do you often come away feeling you could have done better? . . . . . Yes No

29. Are you mostly quiet when you are with other people? Yes No

30. Do you sometimes gossip? . . . . . Yes No

31. Do ideas run through your head so that you cannot sleep? . . . . . Yes

32. If there is something you want to know about, would you rather look it up in a book than talk to someone about it? . . . . . Yes

33. Do you get palpitations or thumping in your heart? . . . Yes

34. Do you like the kind of work that you need to pay close attention to? . . . . . Yes

35. Do you get attacks of shaking or trembling? . . . . . Yes

36. Would you always declare everything at the customs, even if you knew that you could never be found out? . . Yes

37. Do you hate being with a crowd who play jokes on one another? . . . . . Yes

38. Are you an irritable person? . . . . . Yes

39. Do you like doing things in which you have to act quickly? . . . . . Yes

40. Do you worry about awful things that might happen? . . Yes

41. Are you slow and unhurried in the way you move? . . . Yes

42. Have you ever been late for an appointment or work? . Yes

43. Do you have many nightmares? . . . . . Yes

44. Do you like talking to people so much that you would never miss a chance of talking to a stranger? . . . . . Yes

45. Are you troubled by aches and pains? . . . . . Yes

46. Would you be very unhappy if you could not see lots of people most of the time? . . . . . Yes

47. Would you call yourself a nervous person? . . . . . Yes

48. Of all the people you know are there some whom you definitely do not like? . . . . . Yes

49. Would you say you were fairly self-confident? . . . . . Yes

50. Are you easily hurt when people find fault with you or your work? . . . . . Yes

51. Do you find it hard to really enjoy yourself at a lively party? . . . . . Yes

52. Are you troubled with feelings of inferiority? . . . . . Yes

53. Can you easily get some life into a rather dull party? . Yes

54. Do you sometimes talk about things you know nothing about? . . . . . Yes

55. Do you worry about your health? . . . . . Yes

56. Do you like playing pranks on others? . . . . . Yes

57. Do you suffer from sleeplessness? . . . . . Yes

PLEASE CHECK TO SEE THAT YOU HAVE ANSWERED ALL THE QUESTIONS

Please answer the following questions using the 7-point scale. Circling a 1 would mean the statement was "not at all true", circling a 7 would mean that the statement was "very true". You may circle any number on the scale that best corresponds with how you feel.

I. When you thought about the event that we asked you to think about, which of the following were true?

1) **It didn't bother me because I knew I could handle it.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

2) **I felt uncomfortable.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

3) **I thought of lots of ways to deal with it.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

4) **I thought it was a challenge but not any reason for concern.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

5) **I thought I would feel threatened.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

6) **I immediately came up with the best way to deal with it and felt better about it.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

7) **I thought that how I dealt with the situation would affect my self-esteem.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

8) **I thought that there wasn't much I could do about the situation.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

9) **I thought that there would be the possibility of some harm for me.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

10) **I thought about different ways I could deal with the situation.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

11) **I thought about other people and how they might react.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

12) **I thought it would be my responsibility to resolve the situation.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

13) **I thought that this is the kind of situation I'm not very good at.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

14) **I thought about the situation and decided there would be many ways to change it and make it better.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

15) **I thought that what I would do in the situation would not do much good.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

II. To what extent did you believe that:

1) **The event was uncontrollable.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

2) **Others would help me.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

3) **I would seek information about the event.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

4) **The problem could be resolved.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

5) **I would just wait it out.**

| Not At All True | | | | | | Very True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**INSTRUCTIONS**

**Below is a list of feelings that people sometimes have. Fill in one of the spaces on the right with a check that best describes HOW YOU ARE FEELING AT THIS MOMENT. Make only one check mark for each item.**

**(0) = not at all**
**(1) = a little**
**(2) = moderately**
**(3) = quite a bit**
**(4) = extremely**

| | (0) | (1) | (2) | (3) | (4) |
|---|---|---|---|---|---|
| 1. feeling nervous or shaky inside | | | | | |
| 2. feeling calm | | | | | |
| 3. feeling faintness or dizziness | | | | | |
| 4. feeling relaxed | | | | | |
| 5. feeling pains in heart or chest | | | | | |
| 6. feeling low in energy or slowed down | | | | | |
| 7. feeling energetic | | | | | |
| 8. trembling | | | | | |
| 9. feeling rested | | | | | |
| 10. feeling of being trapped or caught | | | | | |
| 11. feeling suddenly scared | | | | | |
| 12. feeling worried | | | | | |
| 13. feeling at ease | | | | | |
| 14. feeling fearful | | | | | |
| 15. heart pounding or racing | | | | | |
| 16. nausea or upset stomach | | | | | |
| 17. hot or cold spells | | | | | |
| 18. feeling comfortable | | | | | |

| | (0) | (1) | (2) | (3) | (4) |
|---|---|---|---|---|---|
| 19.feeling nervous | | | | | |
| 20.feeling you have a lump in your throat | | | | | |
| 21.feeling pleasant | | | | | |
| 22.feeling tense or keyed up | | | | | |
| 23.spells of terror or panic | | | | | |
| 24.feeling so restless you can't sit still | | | | | |
| 25.feeling self-confident | | | | | |
| 26.feeling helpless | | | | | |

INSTRUCTIONS.

Below is a list of problems and complaints that people sometimes have. Please read each one carefully. After you have done so, please fill in one of the numbered circles to the right that best describes HOW MUCH DISCOMFORT THAT PROBLEM HAS CAUSED YOU DURING THE PAST WEEK INCLUDING TODAY. Mark only one numbered circle for each problem and do not skip any items. If you change your mind, erase your first mark carefully. Read the example below before beginning, and if you have any questions please ask the technician.

SEX

MALE ○

FEMALE ○

NAME. _____

LOCATION: _____

EDUCATION: _____

MARITAL STATUS: MAR ___ SEP. ___ DIV. ___ WID. ___ SING ___

| DATE | | | ID. NUMBER | AGE |
|---|---|---|---|---|
| MO | DAY | YEAR | | |
| | | | | |

VISIT NUMBER: _____

| EXAMPLE<br>HOW MUCH WERE YOU DISTRESSED BY: | NOT AT ALL | A LITTLE BIT | MODERATELY | QUITE A BIT | EXTREMELY |
|---|---|---|---|---|---|
| 1. Bodyaches | ⓪ | ① | ② | ● | ④ |

| HOW MUCH WERE YOU DISTRESSED BY: | | NOT AT ALL | A LITTLE BIT | MODERATELY | QUITE A BIT | EXTREMELY |
|---|---|---|---|---|---|---|
| 1. Headaches | 1 | ⓪ | ① | ② | ③ | ④ |
| 2. Nervousness or shakiness inside | 2 | ⓪ | ① | ② | ③ | ④ |
| 3. Repeated unpleasant thoughts that won't leave your mind | 3 | ⓪ | ① | ② | ③ | ④ |
| 4. Faintness or dizziness | 4 | ⓪ | ① | ② | ③ | ④ |
| 5. Loss of sexual interest or pleasure | 5 | ⓪ | ① | ② | ③ | ④ |
| 6. Feeling critical of others | 6 | ⓪ | ① | ② | ③ | ④ |
| 7. The idea that someone else can control your thoughts | 7 | ⓪ | ① | ② | ③ | ④ |
| 8. Feeling others are to blame for most of your troubles | 8 | ⓪ | ① | ② | ③ | ④ |
| 9. Trouble remembering things | 9 | ⓪ | ① | ② | ③ | ④ |
| 10. Worried about sloppiness or carelessness | 10 | ⓪ | ① | ② | ③ | ④ |
| 11. Feeling easily annoyed or irritated | 11 | ⓪ | ① | ② | ③ | ④ |
| 12. Pains in heart or chest | 12 | ⓪ | ① | ② | ③ | ④ |
| 13. Feeling afraid in open spaces or on the streets | 13 | ⓪ | ① | ② | ③ | ④ |
| 14. Feeling low in energy or slowed down | 14 | ⓪ | ① | ② | ③ | ④ |
| 15. Thoughts of ending your life | 15 | ⓪ | ① | ② | ③ | ④ |
| 16. Hearing voices that other people do not hear | 16 | ⓪ | ① | ② | ③ | ④ |
| 17. Trembling | 17 | ⓪ | ① | ② | ③ | ④ |
| 18. Feeling that most people cannot be trusted | 18 | ⓪ | ① | ② | ③ | ④ |
| 19. Poor appetite | 19 | ⓪ | ① | ② | ③ | ④ |
| 20. Crying easily | 20 | ⓪ | ① | ② | ③ | ④ |
| 21. Feeling shy or uneasy with the opposite sex | 21 | ⓪ | ① | ② | ③ | ④ |
| 22. Feelings of being trapped or caught | 22 | ⓪ | ① | ② | ③ | ④ |
| 23. Suddenly scared for no reason | 23 | ⓪ | ① | ② | ③ | ④ |
| 24. Temper outbursts that you could not control | 24 | ⓪ | ① | ② | ③ | ④ |
| 25. Feeling afraid to go out of your house alone | 25 | ⓪ | ① | ② | ③ | ④ |
| 26. Blaming yourself for things | 26 | ⓪ | ① | ② | ③ | ④ |
| 27. Pains in lower back | 27 | ⓪ | ① | ② | ③ | ④ |
| 28. Feeling blocked in getting things done | 28 | ⓪ | ① | ② | ③ | ④ |
| 29. Feeling lonely | 29 | ⓪ | ① | ② | ③ | ④ |
| 30. Feeling blue | 30 | ⓪ | ① | ② | ③ | ④ |
| 31. Worrying too much about things | 31 | ⓪ | ① | ② | ③ | ④ |
| 32. Feeling no interest in things | 32 | ⓪ | ① | ② | ③ | ④ |
| 33. Feeling fearful | 33 | ⓪ | ① | ② | ③ | ④ |
| 34. Your feelings being easily hurt | 34 | ⓪ | ① | ② | ③ | ④ |
| 35. Other people being aware of your private thoughts | 35 | ⓪ | ① | ② | ③ | ④ |

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Please continue on the following page ▶

| HOW MUCH WERE YOU DISTRESSED BY: | | NOT AT ALL | A LITTLE BIT | MODERATELY | QUITE A BIT | EXTREMELY |
|---|---|---|---|---|---|---|
| 36. Feeling others do not understand you or are unsympathetic | 36 | 0 | 1 | 2 | 3 | 4 |
| 37. Feeling that people are unfriendly or dislike you | 37 | 0 | 1 | 2 | 3 | 4 |
| 38. Having to do things very slowly to insure correctness | 38 | 0 | 1 | 2 | 3 | 4 |
| 39. Heart pounding or racing | 39 | 0 | 1 | 2 | 3 | 4 |
| 40. Nausea or upset stomach | 40 | 0 | 1 | 2 | 3 | 4 |
| 41. Feeling inferior to others | 41 | 0 | 1 | 2 | 3 | 4 |
| 42. Soreness of your muscles | 42 | 0 | 1 | 2 | 3 | 4 |
| 43. Feeling that you are watched or talked about by others | 43 | 0 | 1 | 2 | 3 | 4 |
| 44. Trouble falling asleep | 44 | 0 | 1 | 2 | 3 | 4 |
| 45. Having to check and double-check what you do | 45 | 0 | 1 | 2 | 3 | 4 |
| 46. Difficulty making decisions | 46 | 0 | 1 | 2 | 3 | 4 |
| 47. Feeling afraid to travel on buses, subways, or trains | 47 | 0 | 1 | 2 | 3 | 4 |
| 48. Trouble getting your breath | 48 | 0 | 1 | 2 | 3 | 4 |
| 49. Hot or cold spells | 49 | 0 | 1 | 2 | 3 | 4 |
| 50. Having to avoid certain things, places, or activities because they frighten you | 50 | 0 | 1 | 2 | 3 | 4 |
| 51. Your mind going blank | 51 | 0 | 1 | 2 | 3 | 4 |
| 52. Numbness or tingling in parts of your body | 52 | 0 | 1 | 2 | 3 | 4 |
| 53. A lump in your throat | 53 | 0 | 1 | 2 | 3 | 4 |
| 54. Feeling hopeless about the future | 54 | 0 | 1 | 2 | 3 | 4 |
| 55. Trouble concentrating | 55 | 0 | 1 | 2 | 3 | 4 |
| 56. Feeling weak in parts of your body | 56 | 0 | 1 | 2 | 3 | 4 |
| 57. Feeling tense or keyed up | 57 | 0 | 1 | 2 | 3 | 4 |
| 58. Heavy feelings in your arms or legs | 58 | 0 | 1 | 2 | 3 | 4 |
| 59. Thoughts of death or dying | 59 | 0 | 1 | 2 | 3 | 4 |
| 60. Overeating | 60 | 0 | 1 | 2 | 3 | 4 |
| 61. Feeling uneasy when people are watching or talking about you | 61 | 0 | 1 | 2 | 3 | 4 |
| 62. Having thoughts that are not your own | 62 | 0 | 1 | 2 | 3 | 4 |
| 63. Having urges to beat, injure, or harm someone | 63 | 0 | 1 | 2 | 3 | 4 |
| 64. Awakening in the early morning | 64 | 0 | 1 | 2 | 3 | 4 |
| 65. Having to repeat the same actions such as touching, counting, or washing | 65 | 0 | 1 | 2 | 3 | 4 |
| 66. Sleep that is restless or disturbed | 66 | 0 | 1 | 2 | 3 | 4 |
| 67. Having urges to break or smash things | 67 | 0 | 1 | 2 | 3 | 4 |
| 68. Having ideas or beliefs that others do not share | 68 | 0 | 1 | 2 | 3 | 4 |
| 69. Feeling very self-conscious with others | 69 | 0 | 1 | 2 | 3 | 4 |
| 70. Feeling uneasy in crowds, such as shopping or at a movie | 70 | 0 | 1 | 2 | 3 | 4 |
| 71. Feeling everything is an effort | 71 | 0 | 1 | 2 | 3 | 4 |
| 72. Spells of terror or panic | 72 | 0 | 1 | 2 | 3 | 4 |
| 73. Feeling uncomfortable about eating or drinking in public | 73 | 0 | 1 | 2 | 3 | 4 |
| 74. Getting into frequent arguments | 74 | 0 | 1 | 2 | 3 | 4 |
| 75. Feeling nervous when you are left alone | 75 | 0 | 1 | 2 | 3 | 4 |
| 76. Others not giving you proper credit for your achievements | 76 | 0 | 1 | 2 | 3 | 4 |
| 77. Feeling lonely even when you are with people | 77 | 0 | 1 | 2 | 3 | 4 |
| 78. Feeling so restless you couldn't sit still | 78 | 0 | 1 | 2 | 3 | 4 |
| 79. Feelings of worthlessness | 79 | 0 | 1 | 2 | 3 | 4 |
| 80. The feeling that something bad is going to happen to you | 80 | 0 | 1 | 2 | 3 | 4 |
| 81. Shouting or throwing things | 81 | 0 | 1 | 2 | 3 | 4 |
| 82. Feeling afraid you will faint in public | 82 | 0 | 1 | 2 | 3 | 4 |
| 83. Feeling th. people will take advantage of you if you let them | 83 | 0 | 1 | 2 | 3 | 4 |
| 84. Having thoughts about sex that bother you a lot | 84 | 0 | 1 | 2 | 3 | 4 |
| 85. The idea that you should be punished for your sins | 85 | 0 | 1 | 2 | 3 | 4 |
| 86. Thoughts and images of a frightening nature | 86 | 0 | 1 | 2 | 3 | 4 |
| 87. The idea that something serious is wrong with you body | 87 | 0 | 1 | 2 | 3 | 4 |
| 88. Never feeling close to another person | 88 | 0 | 1 | 2 | 3 | 4 |
| 89. Feelings of guilt | 89 | 0 | 1 | 2 | 3 | 4 |
| 90. The idea that something is wrong with your mind | 90 | 0 | 1 | 2 | 3 | 4 |

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THE HASSLES SCALE

Directions: Hassles are irritants that can range from minor annoyances to fairly major pressures, problems, or difficulties. They can occur few or many times.

Listed in the center of the following pages are a number of ways in which a person can feel hassled. First, circle the hassles that have happened to you in the past month. Then look at the numbers on the right of the items you circled. Indicate by circling a 1, 2, or 3 how SEVERE each of the circled hassles has been for you in the past month. If a hassle did not occur in the last month do NOT circle it.

| HASSLES | SEVERITY<br>1. Somewhat severe<br>2. Moderately severe<br>3. Extremely severe | | |
|---|---|---|---|
| (1) Misplacing or losing things ..... | 1 | 2 | 3 |
| (2) Troublesome neighbors ..... | 1 | 2 | 3 |
| (3) Social obligations ..... | 1 | 2 | 3 |
| (4) Inconsiderate smokers ..... | 1 | 2 | 3 |
| (5) Troubling thoughts about your future ..... | 1 | 2 | 3 |
| (6) Thoughts about death ..... | 1 | 2 | 3 |
| (7) Health of a family member ..... | 1 | 2 | 3 |
| (8) Not enough money for clothing ..... | 1 | 2 | 3 |
| (9) Not enough money for housing ..... | 1 | 2 | 3 |
| (10) Concerns about owing money ..... | 1 | 2 | 3 |

| | HASSLES | SEVERITY<br>1. Somewhat severe<br>2. Moderately severe<br>3. Extremely severe | | |
|---|---|---|---|---|
| (11) | Concerns about getting credit ..... | 1 | 2 | 3 |
| (12) | Concerns about money for emergencies ..... | 1 | 2 | 3 |
| (13) | Someone owes you money ..... | 1 | 2 | 3 |
| (14) | Financial responsibility for someone who doesn't live with you ..... | 1 | 2 | 3 |
| (15) | Cutting down on electricity, water, etc. ..... | 1 | 2 | 3 |
| (16) | Smoking too much ..... | 1 | 2 | 3 |
| (17) | Use of alcohol ..... | 1 | 2 | 3 |
| (18) | Personal use of drugs ..... | 1 | 2 | 3 |
| (19) | Too many responsibilities ..... | 1 | 2 | 3 |
| (20) | Decisions about having children ..... | 1 | 2 | 3 |
| (21) | Non-family members living in your house ..... | 1 | 2 | 3 |
| (22) | Care for pet ..... | 1 | 2 | 3 |
| (23) | Planning meals ..... | 1 | 2 | 3 |
| (24) | Concerned about the meaning of life ..... | 1 | 2 | 3 |
| (25) | Trouble relaxing ..... | 1 | 2 | 3 |
| (26) | Trouble making decisions ..... | 1 | 2 | 3 |
| (27) | Problems getting along with fellow workers ..... | 1 | 2 | 3 |
| (28) | Customers or clients give you a hard time ..... | 1 | 2 | 3 |
| (29) | Home maintenance (inside) ..... | 1 | 2 | 3 |
| (30) | Concerns about job security ..... | 1 | 2 | 3 |
| (31) | Concerns about retirement ..... | 1 | 2 | 3 |
| (32) | Laid off or out of work ..... | 1 | 2 | 3 |

| | HASSLES | SEVERITY<br>1. Somewhat severe<br>2. Moderately severe<br>3. Extremely severe | | |
|---|---|---|---|---|
| (33) | Don't like current work duties ..... | 1 | 2 | 3 |
| (34) | Don't like fellow workers ..... | 1 | 2 | 3 |
| (35) | Not enough money for basic necessities ..... | 1 | 2 | 3 |
| (36) | Not enough money for food ..... | 1 | 2 | 3 |
| (37) | Too many interruptions ..... | 1 | 2 | 3 |
| (38) | Unexpected company ..... | 1 | 2 | 3 |
| (39) | Too much time on hands ..... | 1 | 2 | 3 |
| (40) | Having to wait ..... | 1 | 2 | 3 |
| (41) | Concerns about accidents ..... | 1 | 2 | 3 |
| (42) | Being lonely ..... | 1 | 2 | 3 |
| (43) | Not enough money for health care ..... | 1 | 2 | 3 |
| (44) | Fear of confrontation ..... | 1 | 2 | 3 |
| (45) | Financial security ..... | 1 | 2 | 3 |
| (46) | Silly practical mistakes ..... | 1 | 2 | 3 |
| (47) | Inability to express yourself ..... | 1 | 2 | 3 |
| (48) | Physical illness ..... | 1 | 2 | 3 |
| (49) | Side effects of medication ..... | 1 | 2 | 3 |
| (50) | Concerns about medical treatment ..... | 1 | 2 | 3 |
| (51) | Physical appearance ..... | 1 | 2 | 3 |
| (52) | Fear of rejection ..... | 1 | 2 | 3 |
| (53) | Difficulties with getting pregnant ..... | 1 | 2 | 3 |
| (54) | Sexual problems that result from physical problems ..... | 1 | 2 | 3 |

| | HASSLES | SEVERITY<br>1. Somewhat severe<br>2. Moderately severe<br>3. Extremely severe | | |
|---|---|---|---|---|
| (55) | Sexual problems other than those resulting from physical problems ..... | 1 | 2 | 3 |
| (56) | Concerns about health in general ..... | 1 | 2 | 3 |
| (57) | Not seeing enough people ..... | 1 | 2 | 3 |
| (58) | Friends or relatives too far away ..... | 1 | 2 | 3 |
| (59) | Preparing meals ..... | 1 | 2 | 3 |
| (60) | Wasting time ..... | 1 | 2 | 3 |
| (61) | Auto maintenance ..... | 1 | 2 | 3 |
| (62) | Filling out forms ..... | 1 | 2 | 3 |
| (63) | Neighborhood deterioration ..... | 1 | 2 | 3 |
| (64) | Financing children's education ..... | 1 | 2 | 3 |
| (65) | Problems with employees ..... | 1 | 2 | 3 |
| (66) | Problems on job due to being a woman or man .... | 1 | 2 | 3 |
| (67) | Declining physical abilities ..... | 1 | 2 | 3 |
| (68) | Being exploited ..... | 1 | 2 | 3 |
| (69) | Concerns about bodily functions ..... | 1 | 2 | 3 |
| (70) | Rising prices of common goods ..... | 1 | 2 | 3 |
| (71) | Not getting enough rest ..... | 1 | 2 | 3 |
| (72) | Not getting enough sleep ..... | 1 | 2 | 3 |
| (73) | Problems with aging parents ..... | 1 | 2 | 3 |
| (74) | Problems with your children ..... | 1 | 2 | 3 |
| (75) | Problems with persons younger than yourself .... | 1 | 2 | 3 |
| (76) | Problems with your lover ..... | 1 | 2 | 3 |

| | HASSLES | SEVERITY<br>1. Somewhat severe<br>2. Moderately severe<br>3. Extremely severe | | |
|---|---|---|---|---|
| (77) | Difficulties seeing or hearing ..... | 1 | 2 | 3 |
| (78) | Overloaded with family responsibilities ..... | 1 | 2 | 3 |
| (79) | Too many things to do ..... | 1 | 2 | 3 |
| (80) | Unchallenging work ..... | 1 | 2 | 3 |
| (81) | Concerns about meeting high standards ..... | 1 | 2 | 3 |
| (82) | Financial dealings with friends or acquaintance. | 1 | 2 | 3 |
| (83) | Job dissatisfactions ..... | 1 | 2 | 3 |
| (84) | Worries about decisions to change jobs ..... | 1 | 2 | 3 |
| (85) | Trouble with reading, writing, or spelling abilities ..... | 1 | 2 | 3 |
| (86) | Too many meetings ..... | 1 | 2 | 3 |
| (87) | Problems with divorce or separation ..... | 1 | 2 | 3 |
| (88) | Trouble with arithmetic skills ..... | 1 | 2 | 3 |
| (89) | Gossip ..... | 1 | 2 | 3 |
| (90) | Legal problems ..... | 1 | 2 | 3 |
| (91) | Concerns about weight ..... | 1 | 2 | 3 |
| (92) | Not enough time to do the things you need to do. | 1 | 2 | 3 |
| (93) | Television ..... | 1 | 2 | 3 |
| (94) | Not enough personal energy ..... | 1 | 2 | 3 |
| (95) | Concerns about inner conflicts ..... | 1 | 2 | 3 |
| (96) | Feel conflicted over what to do ..... | 1 | 2 | 3 |
| (97) | Regrets over past decisions ..... | 1 | 2 | 3 |
| (98) | Menstrual (period) problems ..... | 1 | 2 | 3 |
| (99) | The weather ..... | 1 | 2 | 3 |
| (100) | Nightmares ..... | 1 | 2 | 3 |

| | HASSLES | SEVERITY<br>1. Somewhat severe<br>2. Moderately severe<br>3. Extremely severe | | |
|---|---|---|---|---|
| (101) | Concerns about getting ahead ..... | 1 | 2 | 3 |
| (102) | Hassles from boss or supervisor ..... | 1 | 2 | 3 |
| (103) | Difficulties with friends ..... | 1 | 2 | 3 |
| (104) | Not enough time for family ..... | 1 | 2 | 3 |
| (105) | Transportation problems ..... | 1 | 2 | 3 |
| (106) | Not enough money for transportation ..... | 1 | 2 | 3 |
| (107) | Not enough money for entertainment and recreation ..... | 1 | 2 | 3 |
| (108) | Shopping ..... | 1 | 2 | 3 |
| (109) | Prejudice and discrimination from others ..... | 1 | 2 | 3 |
| (110) | Property, investments or taxes ..... | 1 | 2 | 3 |
| (111) | Not enough time for entertainment and recreation ..... | 1 | 2 | 3 |
| (112) | Yardwork or outside home maintenance ..... | 1 | 2 | 3 |
| (113) | Concerns about news events ..... | 1 | 2 | 3 |
| (114) | Noise ..... | 1 | 2 | 3 |
| (115) | Crime ..... | 1 | 2 | 3 |
| (116) | Traffic ..... | 1 | 2 | 3 |
| (117) | Pollution ..... | 1 | 2 | 3 |

HAVE WE MISSED ANY OF YOUR HASSLES? IF SO, WRITE THEM IN BELOW:

| | | | | |
|---|---|---|---|---|
| (118) | _____ | 1 | 2 | 3 |

ONE MORE THING: HAS THERE BEEN A CHANGE IN YOUR LIFE THAT AFFECTED HOW YOU ANSWERED THIS SCALE? IF SO, TELL US WHAT IT WAS:

_____

## Perceived Stress Scale

The questions on this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought in a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

2. In the last month, how often have you thought that you were unable to control the important things in your life?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

3. In the last month, how often have you felt nervous and "stressed?"

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

4. In the last month, how often have you dealt successfully with irritating life hassles?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

5. In the last month, how often have you felt that you were effectively coping with important changes that were occuring in your life?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

6. In the last month, how often have you felt confident about your ability to handle personal problems?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

7. In the last month, how often have you felt that things were going your way?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

8. In the last month, how often have you found that you could not cope with all the things that you had to do?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

9. In the last month, how often have you been able to control irritations in your life?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

10. In the last month, how often have you felt that you were on top of things?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

11. In the last month, how often have you been angered because of things that have happened that are outside your control?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

12. In the last month, how often have you found yourself thinking about things that you have to accomplish?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

13. In the last month, how often have you been able to control the way you spend your time?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

14 In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| *never* | *almost never* | *sometimes* | *fairly often* | *very often* |

INSTRUCTIONS FOR SCORING YOUR ADJUSTMENT TO
TO YOUR RECENT LIFE CHANGE

Persons adapt to their recent life changes in different ways. Some people find the adjustment to a residential move, for example, to be enormous, while others find very little life adjustment necessary. You are now requested to "score" each of the recent life changes that you marked with an "X" as to the amount of adjustment you needed to handle the event.

Your scores can range from 1 to 100 "points." If, for example, you experienced a recent residential move but felt it required very little life adjustment, you would choose a low number and place it in the blank to the right of the question's boxes. On the other hand, if you recently changed residence and felt it required a near maximal life adjustment, you would place a high number, toward 100, in the blank to the right of that question's boxes. For intermediate life adjustment scores you would choose intermediatge numbers between 1 and 100.

Please go back through your questionnaire and for each recent life change you indicated with an "X," choose your personal life change adjustment score (between 1 and 100) which reflects what you saw to be the amount oflife adjustment necessary to cope with or handle the event. Use both your estimates of the intensity of the life change and its duration to arrive at your scores.

## RECENT LIFE CHANGES QUESTIONNAIRE

I. Instructions for Marking Your Recent Life Changes

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

Now go through the questionnaire and mark your recent life changes. The column marked "Your Adjustment Score" will be explained at the end of the questionnaire.

| A. HEALTH | 19-24 mo. ago | 13-18 mo. ago | 7-12 mo. ago | 0-6 mo. ago | Your Adjustment Score |
|---|---|---|---|---|---|
| within the time periods listed, have you experienced: | | | | | |
| 1. an illness or injury which: (a) kept you in bed a week or more, or took you to the hospital? | ____ | ____ | ____ | ____ | _____ |
| (b) was less serious than described above? | ____ | ____ | ____ | ____ | _____ |
| 2. a major change in eating habits? | ____ | ____ | ____ | ____ | _____ |
| 3. a major change in sleeping habits? | ____ | ____ | ____ | ____ | _____ |
| 4. a change in your usual type and/or amount of recreation? | ____ | ____ | ____ | ____ | _____ |
| 5. major dental work? | ____ | ____ | ____ | ____ | _____ |

| B. WORK | 19-24 mo. ago | 13-18 mo. ago | 7-12 mo. ago | 0-6 mo. ago | Your Adjustment core |
|---|---|---|---|---|---|
| 6. changed to a new type of work? | ____ | ____ | ____ | ____ | _____ |
| 7. changed your work hours or conditions? | ____ | ____ | ____ | ____ | _____ |

B. WORK

| within the time periods listed, have you: | 19-24 mo. ago | 13-18 mo. ago | 7-12 mo. ago | 0-6 mo. ago | Your Adjustment Score |
|---|---|---|---|---|---|
| 8. had a change in your responsibilities at work? | | | | | |
| (a) more responsibilities? | ____ | ____ | ____ | ____ | _____ |
| (b) less responsibilities? | ____ | ____ | ____ | ____ | _____ |
| (c) promotion? | ____ | ____ | ____ | ____ | _____ |
| (d) demotion? | ____ | ____ | ____ | ____ | _____ |
| (e) transfer? | ____ | ____ | ____ | ____ | _____ |
| 9. experienced troubles at work? | ____ | ____ | ____ | ____ | _____ |
| 10. experienced a major business readjustment? | ____ | ____ | ____ | ____ | _____ |
| 11. retired? | ____ | ____ | ____ | ____ | _____ |
| 12. experienced being: | | | | | |
| (a) fired from work? | ____ | ____ | ____ | ____ | _____ |
| (b) laid off from work? | ____ | ____ | ____ | ____ | _____ |
| 13. taken courses by mail or studied at home to help you in your work? | ____ | ____ | ____ | ____ | _____ |

C. HOME AND FAMILY

| within the time periods listed, have you experienced: | | | | | |
|---|---|---|---|---|---|
| 14. a change in residence: | | | | | |
| (a) a move within the same town or city? | ____ | ____ | ____ | ____ | _____ |
| (b) a move to a different town, city, or state? | ____ | ____ | ____ | ____ | _____ |
| 15. a change in family "get-togethers"? | ____ | ____ | ____ | ____ | _____ |
| 16. a major change in the health or behavior of a family member (illnesses, accidents, drug or disciplinary problems, etc.)? | ____ | ____ | ____ | ____ | _____ |

within the time periods listed, have you experienced:

| | 19-24 mo. ago | 13-18 mo. ago | 7-12 mo. ago | 0-6 mo. ago | Your Adjustment Score |
|---|---|---|---|---|---|
| 18. the death of a spouse? | _____ | _____ | _____ | _____ | _____ |
| 19. the death of a: | | | | | |
| (a) child? | _____ | _____ | _____ | _____ | _____ |
| (b) brother or sister? | _____ | _____ | _____ | _____ | _____ |
| (c) parent? | _____ | _____ | _____ | _____ | _____ |
| (d) other close family member? | _____ | _____ | _____ | _____ | _____ |
| 20. the death of a close friend? | _____ | _____ | _____ | _____ | _____ |
| 21. a change in the marital status of your parents: | | | | | |
| (a) divorce? | _____ | _____ | _____ | _____ | _____ |
| (b) remarriage? | _____ | _____ | _____ | _____ | _____ |

NOTE:
(Questions 22-33 concern marriage. For persons never marrried, go to item 34.)

| | | | | | |
|---|---|---|---|---|---|
| 22. marriage? | _____ | _____ | _____ | _____ | _____ |
| 23. a change in arguments with your spouse? | _____ | _____ | _____ | _____ | _____ |
| 24. in-law problems? | _____ | _____ | _____ | _____ | _____ |
| 25. a separation from spouse: | | | | | |
| (a) due to work? | _____ | _____ | _____ | _____ | _____ |
| (b) due to marital problems? | _____ | _____ | _____ | _____ | _____ |
| 26. a reconciliation with spouse? | _____ | _____ | _____ | _____ | _____ |
| 27. a divorce? | _____ | _____ | _____ | _____ | _____ |
| 28. a gain of a new family member: | | | | | |
| (a) birth of a child? | _____ | _____ | _____ | _____ | _____ |
| (b) adoption of a child? | _____ | _____ | _____ | _____ | _____ |
| (c) a relative moving in with you? | _____ | _____ | _____ | _____ | _____ |
| 29. spouse beginning or ceasing work outside the home? | _____ | _____ | _____ | _____ | _____ |

within the time periods listed, have you experienced:

| | 19-24 mo. ago | 13-18 mo. ago | 7-12 mo. ago | 0-6 mo. ago | Your Adjustment Scrore |
|---|---|---|---|---|---|
| 30. wife (or self) becoming pregnant? | ____ | ____ | ____ | ____ | ____ |
| 31. a child leaving home: | | | | | |
| (a) due to marriage? | ____ | ____ | ____ | ____ | ____ |
| (b) to attend college? | ____ | ____ | ____ | ____ | ____ |
| (c) for other reasons? | ____ | ____ | ____ | ____ | ____ |
| 32. wife or (self) having a miscarriage or an abortion? | ____ | ____ | ____ | ____ | ____ |
| 33. birth of a grandchild? | ____ | ____ | ____ | ____ | ____ |

D. PERSONAL AND SOCIAL

within the time periods listed, have you experienced:

| | | | | | |
|---|---|---|---|---|---|
| 34. a major personal achievement? | ____ | ____ | ____ | ____ | ____ |
| 35. a change in your personal habits (your dress, friends life-style, etc.)? | ____ | ____ | ____ | ____ | ____ |
| 36. sexual difficulties? | ____ | ____ | ____ | ____ | ____ |
| 37. beginning or ceasing school or college? | ____ | ____ | ____ | ____ | ____ |
| 38. a change of school or college? | ____ | ____ | ____ | ____ | ____ |
| 39. a vacation? | ____ | ____ | ____ | ____ | ____ |
| 40. a change in your religious beliefs? | ____ | ____ | ____ | ____ | ____ |
| 41. a change in your social activities (clubs, movies, visiting)? | ____ | ____ | ____ | ____ | ____ |
| 42. a minor violation of the law? | ____ | ____ | ____ | ____ | ____ |

within the time periods listed, have you experienced:

| | 19-24 mo. ago | 13-18 mo. ago | 7-12 mo. ago | 0-6 mo. ago | Your Adjustment Score |
|---|---|---|---|---|---|
| 43. legal troubles resulting in your being held in jail? | ____ | ____ | ____ | ____ | _____ |
| 44. a change in your political beliefs? | ____ | ____ | ____ | ____ | _____ |
| 45. a new, close, personal relationship? | ____ | ____ | ____ | ____ | _____ |
| 46. an engagement to marry? | ____ | ____ | ____ | ____ | _____ |
| 47. a "falling out" of a close personal relationship? | ____ | ____ | ____ | ____ | _____ |
| 48. girlfriend (or boyfriend) problems? | ____ | ____ | ____ | ____ | _____ |
| 49. a loss or damage of personal property? | ____ | ____ | ____ | ____ | _____ |
| 50. an accident? | ____ | ____ | ____ | ____ | _____ |
| 51. a major decision regarding your immediate future? | ____ | ____ | ____ | ____ | _____ |

B. FINANCIAL

within the time periods listed, have you:

| | | | | | |
|---|---|---|---|---|---|
| 52. taken on a moderate purchase, such as a T.V., car, freezer? | ____ | ____ | ____ | ____ | _____ |
| 53. taken on a major purchase or a mortgage loan, such as a home, business, property? | ____ | ____ | ____ | ____ | _____ |
| 54. experienced a foreclosure on a mortgage or loan? | ____ | ____ | ____ | ____ | _____ |
| 55. experienced a major change in finances: | | | | | |
| (a) increased income? | ____ | ____ | ____ | ____ | _____ |
| (b) decreased income? | ____ | ____ | ____ | ____ | _____ |
| (c) credit rating difficulties? | ____ | ____ | ____ | ____ | _____ |

I. Please rate the degree to which you agree or disagree with the following statements. If you agree strongly, you might pick "1," if you agree, but not strongly, you might pick "2" or "3." If you disagree, you would pick "5," "6," or "7," depending on how strongly you disagree. If you don't really agree or disagree, you would pick "4."

| | | Agree strongly | | | | | | Disagree Strongly |
|---|---|---|---|---|---|---|---|---|
| 1. | I often feel lonely, like I don't have anyone to reach out to. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. | When I am unhappy or under stress, there are people I can turn to for support. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. | I don't know anyone to confide in. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. | I used to have close friends to talk to about things, but I don't anymore. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. | When I am troubled, I keep things to myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. | I am not a member of any social groups (such as church groups, clubs, teams, etc.). | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. | It is often not worth the effort to try to change the way things are. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. | I think that one can control what happens to him/her. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. | In (my home/the home) it is easy to predict what will happen. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. | In my life, in general, I think it is worthwhile to try to affect the way things are. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. | There is nó point in trying to regulate contact with people in (this/my) home. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

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