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THE RELATIONSHIP OF ATTRAITIONS
ABOUT EVENTS AND THE
PERCEPTION OF STRESS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

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1997

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The purpose of this study was to examine the relationship of the cognitive processes of attribution that have been shown to be involved in the appraisal of stressful events and their relationship to the perception of stress. Many studies of the transactional model of stress appraisal have tended to view such cognitive variables as mediators between stress and coping from the view of their role as predictors of choice and effectiveness of coping behaviors. However, this study approaches the question conceptually not from a unidirectional approach of viewing the variables as predictors, but from a more bi-directional view of their possible role as cognitive antecedents that in fact may ameliorate the stressful event and the perceived demands prior to the choice of or engagement in coping behaviors. The primary hypothesis tested was that the nature of the attributions that one makes about an event would serve as a moderator of the stressful event prior to the engagement of the secondary appraisal process or coping behaviors.

To test these relationships a multiple linear regression was run using the locus of causality, stability, personal control, and external control as independent variables and overall occupational
stress as the dependent variable using an alpha of .05 (two-tailed) for significance. In addition, a series of single factor ANOVAs were done to examine if there is a specific pattern of attributions that relate to the perception of high or low stress.

The results of the multiple regression support the hypothesis that attributions in general are predictive of the perception of stress in the environment. However, the results of the simple regressions indicate that only stability is a significant predictor when looked at individually. The primary hypothesis that the nature of the attributions that one makes about an event serve as a moderator of the stressful event prior to engagement of the secondary appraisal process was supported by the results of the single factor ANOVAs conducted on the high and low stress groups. Significant differences in the patterns of attributions were evident.
To my wife Rachel whose love and support sustained me through this process and to my mother who always believed in me and whose memory still guides me.
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I want to express my sincere thanks to Dr. Samuel H. Osipow for his endless patience and guidance throughout this process and his faith in my ability to endure. I wish to thank the other members of my committee, Drs. W. Bruce Walsh and Frederick T. L. Leong, for their suggestions and comments. I would also like to thank all those who graciously participated in this study. To my family, I offer my sincere thanks for their patience and understanding during my mental absences during this long process.
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CHAPTER 1

INTRODUCTION

The purpose of this study is to examine the relationship of the cognitive processes of attribution that have been shown to be involved in the appraisal of stressful events and their relationship to the perception of stress. Many studies of the transactional model of stress appraisal have tended to view such cognitive variables as mediators between stress and coping from the view of their role as predictors of choice and effectiveness of coping behaviors. Indeed, many of these studies have demonstrated the positive relationship between attributions, self-efficacy, problem-focused coping behaviors, and reduced strain (Chwalisz, Altmaier, & Russell, 1992; Morgan, Owens, Miller, & Watts, 1986; Dewe, 1991; Litt, 1988). However, this study will approach the question conceptually not from a unidirectional approach of viewing the variables as predictors, but from a more bi-directional view of their possible role as cognitive antecedents that in fact may ameliorate the stressful event and the perceived demands prior to the choice of or engagement in coping behaviors.
It may be helpful to review the components of the stress, coping and strain model and the role of appraisal in this transaction. Stress is commonly defined as relational in nature involving some type of transaction between the individual and the environment (Dewe, 1991, Lazarus & Folkman, 1982). The environment for this study was the occupational setting. Strain is viewed as the outcome of the transaction and is usually manifested by physical and/or emotional distress experienced by the individual. Coping refers to cognitive and behavioral efforts to master, reduce, or tolerate the internal and/or external demands created by the stressful encounter (Folkman & Lazarus, 1980).

Appraisal of the event is the meaning that the event holds for the individual in the particular encounter. It is a sense of importance that something is at stake (Folkman, 1982). This appraisal process is generally viewed in terms of primary and secondary processes. Primary appraisal involves cognitions about the environment and secondary appraisal involves the cognitions about one’s interaction with the environment. These processes are made up of the cognitions that are activated by the event prior to the engagement of the coping mechanisms. In the primary appraisal process the significance of the event is seen as either irrelevant, benign/positive, or stressful. It is at this initial
stage that an event would be classified as constituting a challenge, a threat, or as potentially causing harm or loss (Chwalisz et al., 1992).

An additional process that takes place during primary appraisal is the forming of attributions about the stressful encounter. The attributions that the individual makes about the stressful event have been shown to have direct effects on the secondary appraisal process as well as indirect effects on the type of coping behaviors employed. Studies that have examined attribution have generally look at three dimensional constructs to explain the process that an individual experiences. The first dimension is labeled controllability or locus of control. The most common example of generalized beliefs about control is the concept of internal versus external locus of control (Rotter, 1966, 1975). Individuals with an internal locus of control believe that events are contingent on their own behavior, whereas those with an external locus of control believe that events are largely due to luck, fate, or other people. The second dimension, stability, refers to the whether the cause of the event is viewed as permanent and stable or temporary and variable. Causality is the third dimension seen as describing the cognitions that the individual has about the environmental events. Locus of causality
considers whether the individual sees the cause of the event as internal or external to the person.

Some researchers have viewed the above stages of the primary appraisal process, significance (challenge, threat, or harm or loss) and attributions (controllability, stability, and causality), as being sequential while others have indicated that they may be simultaneous. It will be the purpose of this study to examine the nature of this relationship.

The combinations across these three dimensions have been shown to have significant effects on the secondary appraisal process. Secondary appraisal deals with the cognitions that one has about one’s ability to deal with the particular encounter. It is an evaluative process that takes into account the available coping options, the probability that a given coping behavior will yield the desired result (outcome expectancy), and the belief that one has the ability to perform the given behavior (coping self-efficacy) (Folkman & Lazarus, 1985).

Previous research has shown that individuals who are inclined to view events as more internally controllable, changeable, and with an internal locus of causality tend to exhibit higher levels of coping self-efficacy and increased use of problem-focused coping behavior (Chwalisz et al., 1992).
Emotion-focused coping (e.g., distancing) has been shown to be more associated with low levels of self-efficacy which, in turn, has been shown to be more common among those who see events as uncontrollable, unchangeable, and caused by luck, fate, or others (Folkman, 1984). Problem-focused coping is expected to change the environment in ways that will decrease the possibility of the event happening in the future. In reality both problem-focused and emotion-focused coping behaviors are common to each stressful encounter. The level of self-efficacy, which can be viewed as a mediator through which attributions affect coping, determines the level and purpose of each type of coping behavior. An individual with higher levels of self-efficacy may use emotion-focused coping as a way to decrease overall distress that might interfere with problem-focused activities (Folkman, 1984). The distinction here is whether emotion-focused coping is utilized to enhance the problem-focused activities or whether it is used as the primary means of coping (e.g. distancing) (Folkman & Lazarus, 1988).

Through these relationships one can see that attributions exert a direct effect on the secondary appraisal process which includes self-efficacy for coping, and through self-efficacy, attribution’s indirect effect on coping and perceived strain or outcome. High self-efficacy expectations have been associated
with attributions to stable and controllable causes for performance on a motor task (McAuley, Duncan, & McElroy, 1989). This is suggestive of a transactional relationship between primary and secondary appraisal (Folkman & Lazarus, 1985). Persons with high levels of coping self-efficacy may experience stressful events as more controllable and their coping abilities as more stable than those with low self-efficacy. These attributions may, in turn, influence future self-efficacy cognitions and subsequent coping behavior (Bandura, 1986). Bandura (1986) also argued that self-efficacy provides some of the information, along with outcomes, from which attributions are formed, highlighting the recursive nature of the relationship. The implication here is that performance feedback not only reinforces our self-efficacy but also indirectly can have a moderating effect on our attributions which, in turn, alters our perception of the event as stressful. A person with a stronger sense of self-efficacy for coping would, in cognitively analyzing the event, tend to take a more problem-focused view thereby perceiving the event as less stressful from the onset (Morgan, Owen, Miller, & Watts, 1986).

The purpose of this study was to examine the relationship between dimensions of attributions in the primary appraisal process that have been shown to influence secondary appraisal in
such a way as to lead to more or less effective coping behavior and the overall level of stress experienced in a specific domain (e.g. the occupational environment). The primary hypothesis tested was that the nature of the attributions that one makes about an event would serve as a moderator of the stressful event prior to the engagement of the secondary appraisal process or coping behaviors.
CHAPTER 2

LITERATURE REVIEW

Attribution theory has been extensively studied in the context of achievement and motivation in performance and the causes of success and failure in performance related tasks (Weiner, 1985). Most of this research has focused on the subsequent nature of the attributions one makes for the outcome of performance. The theoretical generality of the attribution theory has been demonstrated in a number of studies (Weiner, 1985). Weiner posited that the foundation for generality of attribution theory from the achievement domain to other areas of study is based on two conceptual mechanisms. "First it is proposed that a motivational episode is initiated following any outcome that can be construed as attainment or nonattainment of a goal.... additionally, the concept has been used to examine a number of social and personal failures, including alcoholism, crime, parole decisions, depression, deprivation, loneliness, and need for help." (p. 567).

Attributions measured along the dimensions of controllability, stability, and causality have been shown to have
significant effects on the cognitive function of self-efficacy and subsequent choice of coping behaviors. Bandura (1986) suggested that it is a combination of self-efficacy and the feedback from these outcome experiences that help to form the attributions that affect future behavior. It was the purpose of this study to examine the possible effects of these relationships on the attributions one makes about stressful events and whether particular patterns of attributions may serve as a moderator of the perception of the event as more or less stressful.

This review looks at studies that have examined the relationship of attributions and stressful events.

ATTRIBUTION AND STRESS

The theory that certain cognitive factors, such as dysfunctional attitudes and attributional style, may influence the definition of negative life events by lowering the threshold for what is perceived as stressful was examined by Simons, Angell, Monroe, & Thase (1993). In that study they also proposed the hypothesis that specific factors also may influence the rating or evaluation of the severity of the stress and even cause those with specific attributional styles to generate negative life events.
To test these hypotheses subjects were selected from outpatients seeking treatment for depression at the Western Psychiatric Institute and Clinic at the University of Pittsburgh. A total of 55 subjects were qualified and administered the Beck Depression Inventory (BDI; Beck, Ward, Mack, & Erbaugh, 1961) using a self-report method and the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960) using an interview method to examine the question of subjective versus objective experience of depression. Two measures were used to assess the cognitive factors, the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978) and the Attributional Style Questionnaire (ASQ; Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, 1982). Both a self-report and an interview based assessment of life events were used. The self-report method was the modified version of the PERI Life Events Scale (Dohrenwend, Kransnoff, Askenasy, & Dohrenwend, 1978) and the interview-based method was the Bedford Life Events and Difficulty Schedule (LEDS; Brown & Harris, 1978). The self-report and interview-based methods of data gathering were employed to allow comparison of the subjective experiences of the subjects and the objective experience of the raters when it came to the evaluation of the frequency and severity of depression and stressful events the subjects reported.
The first hypothesis concerned the influence of cognitive factors on the definition of negative life events. The results of a hierarchical multiple regression indicated that even though the BDI and the LEDS were significant predictors of the number of events reported and the DAS scores added to this relationship, the ASQ scores did not provide any significant prediction. The second hypothesis concerned the reported life events and whether cognitive factors were predictive of the severity rating the subjects assigned to them. All independent measures (BDI, LEDS, DAS, & ASQ) were found to be predictive of the severity level assigned to the reported events by the subjects. The third hypothesis concerned the generation of negative life events by those with specific cognitive factors. To test this the authors conducted partial correlation analysis and found that the ASQ scores showed a trend toward a positive association with the number of negative events reported.

These findings indicate that there is a large discrepancy between self-report and interview-based assessment of events in depressed subjects. This study showed that both the severity and the frequency of these events can be influenced by cognitive factors such as dysfunctional attitudes and more stable and global attributions. Furthermore, these results suggest that cognitive
factors also may contribute to the generation of negative life events. Even with recognizing the limitation of the cross-sectional design of this study, the results support the idea that individuals with elevated scores on cognitive measures are prone to notice and register certain events more readily. The authors are careful to point out that the relationship could be conceived as being the reverse i.e., that individuals who experience more negative life events endorse more dysfunctional attitudes and make more stable and global attributions about those events. However, when the investigators separated those data for those subjects experiencing their first depressive episode from those with recurrent depression, the former group showed a significant and strong relationship between elevated scores on the cognitive measures and the severity and frequency of negative life events and the latter group did not show this pattern.

In a study to investigate the relationship between causal attributions and symptomatology in victims of crime Falsetti and Resick (1995) studied fifty-one subjects who had not been victims and 120 subjects who had been crime victims and assessed them for symptoms of post-traumatic disorder and depression. The subjects were divided into three groups, nonvictims, victims of a single event and victims of multiple events.
The authors sought to explore the relationship of attributions and disorders based on the reformulated theory of learned helplessness (Abramson, Seligman, & Teasdale, 1978) and Weiner's (1979, 1985) attributional theory. The learned helplessness theory proposes that internal, stable, and global attributions about negative events are associated with depression and Weiner (1972) specifies that these attributions may influence mood and future expectations.

Subjects completed the following instruments. The Victimization Questionnaire (Resick, 1988) was used to qualify and group participants based on the previously mentioned categories. The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and the PTSD Symptom Scale-Self Report (PSS-SR; Foa, Riggs, Dancu, & Rothbaum, 1993) were used to assess symptomatology. Attributions were measured by using the Causal Dimension Scale (CDS; Russell, 1982) and the Attributional Style Questionnaire (ASQ; Peterson et al., 1982). The CDS measures attributions about real life events on dimensions of locus of causality, stability, and controllability. The ASQ measures attributions about hypothetical events, half of which are positive and half are negative. It measures attributions along the
dimensions of internal-external, stable-unstable, and global-specific.

MANOVAs comparing the attributions of the following five groups were computed: (a) victims with PTSD only (b) victims with depression only (c) victims with symptoms of PTSD and depression (d) victims with low symptoms, and (e) nonvictims. Separate MANOVAs were computed on the CDS and ASQ. On the CDS the analysis indicated overall significant group differences. Subsequent univariate analysis of variance indicated differences in causal attributions of victims with symptoms of PTSD and nonvictims. A significant main effect was not found using the ASQ. Stepwise regression was used to determine if causal attributions, as measured by the ASQ and CDS, were predictive of symptomatology. The results indicated that external, unstable attributions for positive events, and internal, stable attributions for negative events were associated with depressive symptoms.

The results of the Falsetti and Resich study were moderately supportive of the hypothesized relationships between attributions and symptomatology. There were significant differences between victim and nonvictim groups in the attributions made about positive and negative events. Results from the stepwise regression analyses indicated that the subscales of both the CDS
and the ASQ are effective in predicting global symptomatology, BDI scores, and PTSD scores.

The results of the Falsetti and Resick study would seem to suggest that specific types of attributions are closely associated to the development of disorders which can be viewed as an indication that the individuals are experiencing the actual event in ways that are dictated by the idiosyncratic attributional style.

The cognitive diathesis-stress modal of depression (Abramson, Metalsky, & Alloy, 1989; Beck, 1967) proposes that negative cognitions are a vulnerability factor that interacts with negative life events to contribute to the onset and maintenance of depression. Based on this premise individuals who have a negative cognitive style are more likely to become depressed when they experience stressful life events than are individuals who do not have such a style.

A study by Hillman and Garber (1995) examined the hypothetical relationship between negative attributional style and depressive symptoms. Using a short term prospective design they tested whether attributional style or perceived lack of academic competence and control over academic achievement interacted with an academic stressor to predict negative affect and depressive
symptoms in children, immediately following the stressor, as well as several days later. Stressors were defined as receiving less than acceptable grades on a report card and negative parental reactions to the grade report. The authors hypothesized that an explanatory style in which the causes of negative life events are attributed to global, stable, and internal causes would interact with stressors to predict depressed affect and symptoms. Further, they predicted that subjects who experienced the negative event (less than acceptable grades or negative parental reaction or both) would report negative affect. In addition, based on the cognitive diathesis-stress interaction, those subjects with a more negative cognitive style and lower scores in the domains of perceived academic confidence and control over academic achievement would be expected to have more enduring depressive affect several days after experiencing the stressor.

In the Hilsman and Garber study the subjects were 203 fifth grade and 236 sixth grade students at two public schools in a moderate sized metropolitan area. The Depressive Adjective Checklist (Lubin, 1965) was administered at three times, prior to stressor, immediately following stressor, and 5 days following stressor. The Center for Epidemiological Studies Depression Scale for Children (CES-DC; Weissman, Orvaschel, & Padian, 1980) was
also administered at all three sessions. The Children’s Attributional Style Questionnaire (CASQ; Seligman, et al., 1984) was administered at the first session. The academic subscale of Harter’s Perceived Competence Scale for Children (Harter, 1982) and the Student Perceptions of Control Questionnaire (Skinner, Chapman, & Bates, 1988; Wellborn, Connell, & Skinner, 1989) were both administered at the first session. At the second session the student reported on parental reactions to the report card.

The data were analyzed by utilizing hierarchical multiple regression to examine the contribution of each cognition, stressor score, and their interaction predicting negative affect and depressive symptoms, separately. At Time 2 there were main effects of the grade stressor for both negative affect and depressive symptoms. The academic cognitions score also predicted negative affect and depressive symptoms at Time 2. Attributional style did not significantly predict depressive affect or symptoms at Time 2.

At Time 3 the grade stressor no longer significantly predicted either negative affect or depressive symptoms, however, both academic cognitions and attributional style predicted negative affect at Time 3 at a significant level. The interaction between cognitions and grade stressor were not significant at Time
2, but as hypothesized at Time 3 both academic cognitions and attri-
butions significantly predicted negative affect and depressive symp-
toms. These interactions showed that students who reported a negative explanatory style or perceptions of lack of competence or control in academic events expressed more depressive symptoms after receiving unacceptable grades than did the students without these negative cognitions. Moreover, students with a more positive cognitive style seemed to be buffered from sustained negative affect. Hilsman and Garber concluded that negative cognitions appeared to increase their vulnerability to depression even before the stressor occurred.

Brown and Siegel (1988) conducted a study examining the attribu-
tions about control and its interaction with other attributions and their contributions to depression. The authors suggest that controllability and its interactions with other attributions play a major role in the individuals interpretation of negative life events that can lead to depression. Specifically, they proposed that individuals with internal, stable, and global attributions (attributional style identified by Abramson et al., 1978 to be associated with depression) about negative events that are considered uncontrollable would experience more depressive symptoms and that those with the same
set of attributions about events but considered controllable would not.

The subjects for this study were 364 females, in grades 7 through 11, attending a private secondary school in Los Angeles. The data were collected at two times separated by an interval of 9 months. At Time 1 subjects completed a measure of life stress with 33 items drawn from previous measures of life stress developed by Sarason, Johnson, & Siegel (1978), Lewis, Siegel, & Lewis (1984), and Newcomb, Huba, & Bentler (1981). The measure assessed the occurrence of major life events, as well as the presence of ongoing sources of strain in children. An attribution questionnaire developed by Gong-Guy and Hammen (1980) that assessed control, locus of causality, stability, and globality was administered. At Time 1 and Time 2 depression was measured by the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977).

The primary hypothesis was that controllability attributions interact with other causal judgments in predicting depression. This was tested by use of hierarchical regression analysis. The data showed that events attributed to uncontrollable causes, stable, internal, and global attributions were associated with increases in depressed mood. In contrast, for outcomes ascribed to
controllable causes, internal and global attributions were associated with decreases in depressed mood. Depression scores did not differ as a function of stability attributions when outcomes were attributed to controllable causes.

This study confirmed the relationship of attributions concerning controllability and the apparent link with the development of depression. In addition, it suggests that how individuals make attributions and the combinations or interaction of these attributions seem to be instrumental in the development of symptoms. If this is the case one might reasonably argue that the events that are experienced have a different valence depending on the pattern of attributions that are made.

ATTRIBUTION AND SECONDARY APPRAISAL

Secondary appraisal is conceptualized as the cognitive process during which the individual evaluates available coping options, the probability that a given behavior will yield the desired result (outcome expectancy), and the belief that one has the ability to perform the given behavior (self-efficacy) (Folkman & Lazarus, 1985). The relationship of the primary appraisal
processes (evaluation of threat, harm, loss, or challenge plus attribution about the event) and the secondary appraisal processes have been extensively studied. These subsequent effects are important to review for the purpose of further understanding the role of attributions in the perception of stress prior to engagement of the secondary processes.

In a study designed to examine the relationship of causal attributions, self-efficacy (secondary appraisal) and coping, Chwalisz et al., (1992) tested a hypothesized model in which self-efficacy mediates the relationship between attributions and coping, against an alternative model suggested by the transactional theory of stress, in which attributions and self-efficacy simultaneously affect coping. Using data from a study of teacher burnout among 316 public school teachers, they conducted a structural equation analysis with latent variables to test the hypothesized and alternative models.

The outcome variable, burnout, was measured by the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981), a 22 item scale with three subscales reflecting the dimensions of emotional exhaustion, depersonalization, and personal accomplishment. Coping was measured using a scale developed by Weisman, Worden, and Sobel (1980). Teachers were asked to indicate which of 15
coping activities they used to cope with the most stressful event that they experienced during the academic year. Using Lazarus and Folkman's (1984) framework the items were separated into problem-focused and emotion-focused categories. Self-efficacy was measured by a single item on which participants were asked to judge their ability to deal with the most stressful event that they had experienced on the job during the academic year. Causal attributions were measured using the Causal Dimension Scale (Russell, 1982), a measure consisting of nine semantic differential scales that reflect the three dimensions of locus of causality, stability, and controllability.

The direction of the relationships between self-efficacy and coping were the same in both models; that is higher self-efficacy was associated with greater use of problem-focused coping and lower self-efficacy was associated with more emotion-focused coping. Corroborating the findings of other studies, greater use of emotion-focused coping activities was significantly associated with higher levels of burnout, whereas problem-focused coping was not significantly associated with burnout. There were no direct effects found for causal attributions and coping in the alternative model where causal attributions and self-efficacy were entered into the equation simultaneously. The results suggest
that a model in which self-efficacy mediates between causal attributions and coping appears to describe the relationships between these cognitions, coping, and burnout. The results suggest that the lack of a direct relationship between causal attributions, as an example of primary appraisals, and coping may indicate that these types of cognitions are mediated by some other psychological process. They also recognized that the direction of the effect of causal attributions is still open to study. "The only way to be certain of the causal direction of these relationships, and/or whether some relationships are bi-directional, would be to examine these constructs over time." (p. 397).

MacNair and Elliott (1992) conducted a study to examine self-perceived problem-solving, stress appraisal, and coping over time. It was predicted that self-perceived effective problem solvers would consistently see less threat (primary appraisal), perceive more options for coping (secondary appraisal), and use more problem-focused and less emotion-focused strategies than self-perceived ineffective problem solvers. Heppner and Krauskopf (1987) theorized that self-perceived problem-solving ability serves a central function in the way that a person perceives and experiences different aspects of dealing with stressful
situations. Individuals who demonstrate a high degree of problem solving ability have been shown to be better able to cope with the problems encountered in everyday stressful life events and exhibit less depression and anxiety under conditions of high stress (Nezu & Ronan, 1988).

The subjects for this study were 141 undergraduate students enrolled in psychology courses at an urban state university. The Problem Solving Inventory (PSI; Heppner, 1988) was used to assess self-appraised problem solving ability. Using Lazarus and Folkman's programmatic research on stress and coping, primary appraisal (degree of threat) was measured using 13 items that described various threats that one might perceive in a particular encounter rated on a 5 point scale. Attributions were measured by four items designed to assess controllability and stability, also rated on a 5 point scale. Coping was measured by the Ways of Coping questionnaire (Folkman et al., 1986). The PSI was administered at Time 1 and the appraisal and coping measures were administered at both Times 2 (2 weeks later) and 3 (4 weeks later).

To test the prediction that problem solving appraisal would be associated with the primary and secondary appraisal of stressful events and the use of coping strategies over time, a 2 X 2 X 2 factorial ANOVA was conducted.
2 repeated-measures MANOVA was computed. Primary appraisal and coping variables revealed a significant effect for self-perceived problem solving as predicted. Persons who reported effective problem solving abilities endorsed more problem-focused coping and fewer emotion-focused coping strategies across the three administrations. However, the results showed no significant relationship between self-perceived problem solving ability and primary and secondary appraisal. It was previously assumed that the perception of one's problem-solving ability may relate to the primary appraisal process or be an integral part of secondary appraisal. The results of this study support neither position, suggesting that primary and secondary appraisal may be more influenced by the unique aspects of a stressful event. The possibility being that those unique aspects could be the attributions that one makes about the importance of the event.

The studies reviewed have demonstrated a variety of relationships in processes involved in the experience of and the coping with stressful events in everyday life as well as the relationship of these processes to outcome. Attributions have been shown to be significantly related to secondary processes including self-efficacy for coping (Chwalisz et al., 1992) and through this relationship, to have a significant impact on the
choice of coping behaviors (MacNair & Elliott, 1992). The choice of coping behaviors (problem-focused or emotion-focused) have been shown to be significantly related to outcome or level of distress (Brown & Siegal, 1988; Falsetti & Resick, 1995; Hilsman & Garber, 1995). Simons et al., (1993) were able to demonstrate that individuals with dysfunctional attitudes and negative attributional style (internal, stable, and global) not only reported higher degrees of severity but also increased number of incidence of negative or stressful events. The central question of this study was to ascertain if through this transactional process of primary appraisal (attributions), secondary appraisal (self-efficacy, outcome expectancy, and perceived availability of options), and coping, the individual that experiences positive outcomes tends to experience less stress due to formation of different sets of attributions.
SUBJECTS & PROCEDURES

To study the relationship of attributional style to the perception of occupational stress subjects were solicited from occupational categories that have traditionally shown a high level of stress. To accomplish this the sample was drawn from the fields of counseling, clinical social work, and education. These occupations have been the subject of extensive stress research in the past (Cummings & Nall, 1983; Farber, 1983; Farber & Miller, 1981; Paine, 1981; Sowa, May, & Niles, 1994; Wade, Cooley, & Savicki, 1986). Employment in human service occupations such as teaching and counseling, appears to be particularly likely to lead to burnout due to stress (Farber, 1983; Wade, Cooley, & Savicki, 1986). Volunteers were solicited from local counseling groups and associations as well as local educational organizations. A total of 95 data packets were distributed and a total of 63 were returned for 66.3% return rate. After reviewing for completeness
58 packets were used in the analysis. Using an alpha of .05 and searching for a medium effect size, it was calculated that a sample size of 55 subjects was necessary to conduct the proposed analyses (Cohen, 1977). The 58 responses fit into the following occupational categories: 36 from mental health and 22 from education.

The subjects were asked to complete three forms. The first was a brief demographic questionnaire requesting age, sex, occupation, length of employment, and ethnicity. The average age was 44.8 with a range from 27 to 65 and a standard deviation of 8.323. The respondents were made up of 19 males and 39 females. Level of education categories were: bachelors degree (6 responses), masters degree (28 responses) and doctoral degree (24 responses). The average length of employment was 12.4 years with a standard deviation of 8.475. The ethnic distribution was 50 Caucasians, 8 African-Americans. The other two forms consisted of an occupational stress measurement (the Occupational Roles Questionnaire taken from the Occupational Stress Inventory, Osipow & Spokane, 1987) and causal attribution measurement (Revised Causal Dimension Scale, McAuley, Duncan, & Russell, 1992). These forms were distributed to prospective volunteers along with instructions for completion, a cover letter explaining the nature
of the research, and appropriate materials for the return of the forms to the researcher.

INSTRUMENTS

The Occupational Stress Inventory (Osipow and Spokane, 1987) is made up of three components: the Occupational Roles Questionnaire (ORQ), designed to measure stress in the work environment; the Personal Strain Questionnaire (PSQ), designed to measure the negative impact of such stresses on the individual; and the Personal Resource Questionnaire (PRQ), designed to assess the coping resources people rely on to deal with or avoid the negative effects of work related stress.

For this study, only the ORQ was used to assess the level of perceived occupational stress. The ORQ is made up of six subscales which represent a social roles approach to occupational stress. This approach assumes that the stress people experience at work is largely due to their perception of the social demands that the workplace imposes on them. The six scales are role overload, where people’s time and resources are not sufficient for completion of work tasks; role ambiguity, where criteria for
successful performance are not clear; role insufficiency, which measures the extent to which the individual's training, education, skills and experience exceed the job requirements; role boundary, which measures the extent to which the individual is experiencing conflicting role demands and loyalties in the work setting; responsibility, that the individual has or feels for the performance and welfare of others on the job; and finally, physical environment, which measures the extent to which the worker is exposed to high levels of environmental demands or extreme physical conditions. In testing the reliability of the total questionnaire the following Alpha coefficients were calculated: .89 (ORQ), .94 (PSQ), .99 (PRQ). Coefficients for the individual scales ranged from .71 to .94. Several validation studies are cited in the manual which suggest that the measures accurately reflect the events they are designed to assess (Osipow and Spokane, 1987).

The Revised Causal Dimension Scale was used to measure causal attributions. This scale consists of twelve semantic differential scales that reflect the three dimensions of locus of causality, stability, and locus of control. The subjects were asked to think of and describe a typical work related stressful event from the past year and to write in their own words what they
believed was the cause of the event. They were then instructed to think about the reasons they have written and to complete the items concerning their impressions or opinions of this cause or causes of their performance. Scores on each causal dimension range from three to 15, with high scores indicating internal, stable, and controllable attributions. Several studies have supported the reliability and validity of the Causal Dimension Scale (Abraham, 1985; Mark, Mutrie, Brooks, & Harris, 1984; Russell, Altmair, & Van Velzen, 1987; McAuley, Duncan, and Russell, 1992) employing data from four studies conducted a confirmatory factor analysis of the CDSII. In this study the authors proposed a four factor model for the CDSII. They found by dividing the locus of control scale into two scales measuring personal control and external control that the four factor model was supported by the data. The average internal consistencies across the four studies were as follows: locus of causality, .67; stability, .67; personal control, .79; external control, .32.
DATA ANALYSIS

The primary hypothesis of this study is that the nature of attributions that one makes about an event serves to moderate the stressful event prior to the engagement of the secondary appraisal process or coping behaviors. To test these relationships a multiple linear regression was run using the locus of causality, stability, personal control, and external control as independent variables and overall occupational stress as the dependent variable using an alpha of .05 (two-tailed) for significance. In addition, a series of single factor ANOVAs were done to examine if there is a specific pattern of attributions that relate to the perception of high or low stress.
CHAPTER 4

RESULTS

ANALYSIS OF DEMOGRAPHICS

Analysis of demographic variables was conducted to ascertain if any significant differences existed based on sex, ethnicity, level of education, and occupational categories within the sample. This was done by conducting single factor ANOVAs. In analyzing occupational categories (mental health and education), sex, ethnicity and level of education no significant difference was detected on perceived stress (ORQ) or attributions about stressful events (CDSII) (Tables 1 through 8). Ethnicity was a significant factor in the perception of personal control ($F(1,56)=7.198$, $p=0.0096$) with African-Americans showing a higher sense of personal control than Caucasians but because of the skewed distribution across ethnic categories within the sample these results may be unreliable. Because of the lack of significant differences across demographic categories the sample was viewed as a whole for examination of the primary hypothesis.
The sample as a whole had a mean raw score on the ORQ of 129.74 as compared to a mean raw score of 137.64 for the sample used in norming the OSI (Osipow & Spokane, 1987).

MAIN STUDY ANALYSIS

The purpose of this study was to examine the attributions that people make about stressful events and the relationship that these attributions have to the perception of stress. The primary hypothesis is that the nature of these attributions, personal or external control, stability, and causality, serve to moderate the stressful event prior to the engagement of secondary appraisal processes or coping behaviors. To assess the relative contribution of each of the independent variables, causality, stability, personal control, and external control to the explanation of variance in the perception of stress a multiple regression was conducted that yielded an $R^2$ of .213. The independent variables as a group were significant predictors of the degree of stress perceived ($F(53,4) = 3.581$, $p = .0117$) (Table 9). However, the only variable to show a unique significant contribution was stability with a $t$-value of 3.374 with a $p = .0014$. The $t$-values of the beta coefficients for the independent
variables are shown in Table 10. The $R^2$ values for each independent variable when used in a simple regression to predict perceived stress as well as the $R^2$ values for the multiple regressions are shown in Table 11 and the correlation matrix for the variables is shown in Table 12.

To further examine how attributions affect the perception of stress a series of single factor ANOVAs were run comparing high and low stress groups and the respective mean scores on locus of causality, stability, personal control and external control (Tables 13 through 20). This grouping was done by using a median split. These results indicate that the higher stress group perceived the stressful event to have a more external cause, to be more stable, and to be able to exercise less personal control. The lower stress group perceived the events to have a more internal cause, to be more changeable, and to be more under their personal control. The attribution of external factors of control was not significantly different for the groups.

The results of the multiple regression support the hypothesis that attributions in general are predictive of the perception of stress in the environment. However, the results of the simple regressions indicate that only stability is a significant predictor when looked at individually. The primary
hypothesis that the nature of the attributions that one makes about an event serve as a moderator of the stressful event prior to engagement of the secondary appraisal process was supported by the results of the single factor ANOVAs conducted on the high and low stress groups. Significant differences in the patterns of attributions were evident.
<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Health</td>
<td>36</td>
<td>126.806</td>
<td>21.146</td>
<td>3.524</td>
</tr>
<tr>
<td>Education</td>
<td>22</td>
<td>134.545</td>
<td>28.493</td>
<td>6.075</td>
</tr>
</tbody>
</table>

Table 1: Means, Standard Deviations and Standard Errors for occupational stress (ORQ) scores reported by occupational categories.
### Table 2: Analysis of variance table for occupational stress (ORQ) scores between occupational groups.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Square</th>
<th>Mean Square</th>
<th>F-test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>818.027</td>
<td>818.027</td>
<td>1.401</td>
<td>.2416</td>
</tr>
<tr>
<td>Within groups</td>
<td>56</td>
<td>32699.093</td>
<td>583.912</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>33517.121</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>n</td>
<td>Mean</td>
<td>Std. Dev.</td>
<td>Std. Error</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>----</td>
<td>--------</td>
<td>-----------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>19</td>
<td>129.474</td>
<td>19.515</td>
<td>4.477</td>
<td></td>
</tr>
<tr>
<td>female</td>
<td>39</td>
<td>129.872</td>
<td>26.488</td>
<td>4.241</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Means, Standard Deviations and Standard Errors for occupational stress (ORQ) scores reported by males and females.
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>2.025</td>
<td>2.025</td>
<td>.003</td>
</tr>
<tr>
<td>Within groups</td>
<td>56</td>
<td>33515.096</td>
<td>598.484</td>
<td>P= .9538</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>33517.121</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Analysis of variance table for occupational stress (ORQ) scores between males and females.
Table 5: Means, Standard Deviations and Standard Errors for occupational stress (ORQ) scores reported by level of education.

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>undergrad</td>
<td>6</td>
<td>134.833</td>
<td>43.069</td>
<td>17.583</td>
</tr>
<tr>
<td>masters</td>
<td>28</td>
<td>126.821</td>
<td>19.048</td>
<td>3.6</td>
</tr>
<tr>
<td>doctorate</td>
<td>24</td>
<td>131.875</td>
<td>24.621</td>
<td>5.026</td>
</tr>
<tr>
<td>Source</td>
<td>DF</td>
<td>Sum of Squares</td>
<td>Mean Square</td>
<td>F-test</td>
</tr>
<tr>
<td>----------------</td>
<td>-----</td>
<td>----------------</td>
<td>-------------</td>
<td>--------</td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>503.555</td>
<td>251.778</td>
<td>0.419</td>
</tr>
<tr>
<td>Within groups</td>
<td>55</td>
<td>33013.565</td>
<td>600.247</td>
<td>p = 0.6595</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>33517.121</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6: Analysis of variance table for occupational stress (ORQ) scores between levels of education.
<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasians</td>
<td>50</td>
<td>131.38</td>
<td>24.363</td>
<td>3.445</td>
</tr>
<tr>
<td>Afr-Amer.</td>
<td>8</td>
<td>119.5</td>
<td>22.233</td>
<td>7.86</td>
</tr>
</tbody>
</table>

Table 7: Means, Standard Deviations and Standard Errors for occupational stress (ORQ) scores reported by ethnic category.
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-test</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>973.341</td>
<td>973.341</td>
<td>1.675</td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>56</td>
<td>32543.78</td>
<td>581.139</td>
<td></td>
<td>.2009</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>33517.121</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8: Analysis of variance table for occupational stress (ORQ) scores between ethnic categories.
Table 9: Analysis of variance table for the prediction of occupational stress (ORQ) by the independent variables locus of causality, stability, external control, and personal control (CDSII).
<table>
<thead>
<tr>
<th>Variable</th>
<th>Coeff.</th>
<th>Std. Err.</th>
<th>Std. Coeff.</th>
<th>t-value</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>96.116</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causality</td>
<td>-.687</td>
<td>.688</td>
<td>-.158</td>
<td>.999</td>
<td>.3223</td>
</tr>
<tr>
<td>Stability</td>
<td>1.842</td>
<td>.546</td>
<td>.424</td>
<td>3.374</td>
<td>.0014</td>
</tr>
<tr>
<td>Ex. Control</td>
<td>.593</td>
<td>.684</td>
<td>.129</td>
<td>.867</td>
<td>.3897</td>
</tr>
<tr>
<td>Per. Control</td>
<td>.136</td>
<td>.699</td>
<td>.034</td>
<td>.194</td>
<td>.8465</td>
</tr>
</tbody>
</table>

Table 10: Beta coefficients Table for multiple regression of locus of causality, stability, external control, and personal control (CDSII) in predicting occupational stress (ORQ).
<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Dependant variable</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causality</td>
<td>Stress (ORQ)</td>
<td>.032</td>
</tr>
<tr>
<td>Stability</td>
<td>Stress (ORQ)</td>
<td>.163*</td>
</tr>
<tr>
<td>External Control</td>
<td>Stress (ORQ)</td>
<td>.023</td>
</tr>
<tr>
<td>Personal Control</td>
<td>Stress (ORQ)</td>
<td>.035</td>
</tr>
<tr>
<td>Causality &amp; Stability</td>
<td>Stress (ORQ)</td>
<td>.201*</td>
</tr>
<tr>
<td>Causality &amp; Stab. &amp; Ex. Con.</td>
<td>Stress (ORQ)</td>
<td>.212*</td>
</tr>
<tr>
<td>Caus. &amp; Stab. &amp; Ex. Con. &amp; Per. Con.</td>
<td>Stress (ORQ)</td>
<td>.213*</td>
</tr>
</tbody>
</table>

*significant at .05

Table 11: Squared correlations for independent variables locus of causality, stability, external control, and personal control (OCDI) predicting stress ORQ).
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ORQ</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causality</td>
<td>-.178</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stability</td>
<td>.404</td>
<td>.039</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ex. Con.</td>
<td>.151</td>
<td>-.442</td>
<td>-.069</td>
<td>1</td>
</tr>
<tr>
<td>Per. Con.</td>
<td>-.188</td>
<td>.62</td>
<td>-.125</td>
<td>-.547</td>
</tr>
</tbody>
</table>

Table 12: Correlation Matrix for all variables.
<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>High stress</td>
<td>29</td>
<td>7.793</td>
<td>5.102</td>
<td>.947</td>
</tr>
<tr>
<td>Low stress</td>
<td>29</td>
<td>10.655</td>
<td>5.777</td>
<td>1.073</td>
</tr>
</tbody>
</table>

Table 13: Means, Standard Deviations, and Standard Errors for locus of causality scores (CDSII) reported by High and Low stress (ORQ) groups.
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>118.776</td>
<td>118.776</td>
<td>3.999</td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>56</td>
<td>1663.31</td>
<td>29.702</td>
<td></td>
<td>.0504</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>1782.086</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 14: Analysis of variance table for locus of causality (CDSII) scores between High and Low stress (ORQ) groups.
### Table 15: Means, Standard Deviations, and Standard Errors for stability scores (CDSII) reported by High and Low stress (ORQ) groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>High stress</td>
<td>29</td>
<td>16.897</td>
<td>4.813</td>
<td>.394</td>
</tr>
<tr>
<td>Low stress</td>
<td>29</td>
<td>12.034</td>
<td>5.286</td>
<td>.382</td>
</tr>
<tr>
<td>Source</td>
<td>DF</td>
<td>Sum of Squares</td>
<td>Mean Square</td>
<td>F-test</td>
</tr>
<tr>
<td>-----------------</td>
<td>----</td>
<td>----------------</td>
<td>-------------</td>
<td>--------</td>
</tr>
<tr>
<td>Between groups</td>
<td>1</td>
<td>342.776</td>
<td>342.776</td>
<td>13.408</td>
</tr>
<tr>
<td>Within groups</td>
<td>56</td>
<td>1431.655</td>
<td>25.565</td>
<td>p = .0006</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>1774.431</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 16: Analysis of variance table for stability (CDSII) scores between High and Low stress (ORQ) groups.
Table 17: Means, Standard Deviations, and Standard Errors for external control scores (CDSII) reported by High and Low stress (ORQ) groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>High stress</td>
<td>29</td>
<td>20.138</td>
<td>5.718</td>
<td>1.062</td>
</tr>
<tr>
<td>Low stress</td>
<td>29</td>
<td>19.172</td>
<td>4.863</td>
<td>0.903</td>
</tr>
</tbody>
</table>
Table 18: Analysis of variance table for external control (CDSII) scores between High and Low stress (ORQ) groups.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>13.517</td>
<td>13.517</td>
<td>.48</td>
</tr>
<tr>
<td>Within groups</td>
<td>56</td>
<td>1577.586</td>
<td>28.171</td>
<td>(p = .4914)</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>1591.103</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>n</td>
<td>Mean</td>
<td>Std. Dev.</td>
<td>Std. Error</td>
</tr>
<tr>
<td>--------------</td>
<td>----</td>
<td>------</td>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td>High stress</td>
<td>29</td>
<td>10.276</td>
<td>5.411</td>
<td>1.005</td>
</tr>
<tr>
<td>Low stress</td>
<td>29</td>
<td>14.172</td>
<td>6.03</td>
<td>1.12</td>
</tr>
</tbody>
</table>

Table 19: Means, Standard Deviations, and Standard Errors for personal control scores (CDSII) reported by High and Low stress (ORQ) groups.
<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-Test</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1</td>
<td>220.155</td>
<td>220.155</td>
<td>6.708</td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>56</td>
<td>1837.931</td>
<td>32.82</td>
<td></td>
<td>p=.0122</td>
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<tr>
<td>Total</td>
<td>57</td>
<td>2058.086</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 20: Analysis of variance table for personal control (CDSII) scores between High and Low stress (ORQ) groups.
CHAPTER 5

DISCUSSION

The results of this study have replicated several findings of previous studies. Attributions as part of the primary appraisal process predicted the perception of stress. The constructs of causality, stability, and control were significant predictors of the perception of stress. However, only stability had a significant unique effect. This finding is consistent with the previously reported positive relationship between attributions of changeability, increased self-efficacy, and problem-focused coping and their ability to predict reduced strain as an outcome (Chwalisz et al., 1992). This also supports Bandura’s (1986) argument that it is at least partially from this process that future attributions are formed.

When examining the attributional styles of high and low stress groups two patterns were apparent that are consistent with previous findings. The group that indicated a higher level of overall occupational stress on the ORQ also reported the described stressful event on the CDSII as having a more external cause, being more stable, and feeling less personal control over the
event. This is consistent with the findings by Folkman (1984) that subjects who utilize more emotion focused coping associated with lower self-efficacy have a tendency to see events as uncontrollable, unchangeable and caused by external factors such as luck, fate, or others.

The low stress group in this study, however, reported a pattern of attributions demonstrating a greater sense of internal causes, less stability, and a stronger sense of personal control. Simons, Angell, Monroe, & Thase (1993) found that subjects with this pattern of attributions not only reported a lower severity rating for stressful events but also reported fewer negative life events. This finding underscores the idea that through the transactional relationship of primary and secondary appraisal and coping, performance feedback plays a significant role in how an individual will appraise future events as either more or less stressful.

IMPLICATIONS FOR COUNSELING

The appraisal process is obviously central to the process of counseling. It tells not only why the individual seeks treatment but also the cognitive and affective states that the counselor and
the client will have to deal with in treatment. Generally, stress and the attributions about stress are central to clients presenting concerns. Regardless of the theoretical approach of the counselor, the assessment of the stress the client is experiencing in his or her environment along with the meaning given to that stress because of the attributions made about the precipitating events is critical to the treatment plan. The attributional style that the client has developed over time can have obvious effects on the development of the problem for the client as well as implications for finding the solution.

In most cognitive/behavioral approaches to therapy the process is one of assessing the role of the client's cognitions in the development of the problem and assisting the client to formulate a reframing of the situation in such a way as to allow for changes to take place in the attributions of both the environment and the ability to change behavior. Considering the findings of this and other studies about the role of causality, stability, and control and their effect on the level of stress experienced, a case can be made for the notion that helping a client become aware of the attributional style in place and employing interventions that will allow for reformulation would facilitate change on the part of the client. If a client sees the
stressor as essentially unchangeable then helplessness and 
hopelessness will logically follow. If a client feels that there
is little hope of exercising personal control over the stressor
the logical outcome would be the same.

Given the findings of this and other studies about the
direct relationship of perceived stress and attributions, it would
seem appropriate for counselors to approach client change as a
function of the assessment of attributional style. The
significant findings in this study that (1), a lack of personal
control and (2), a belief that the stressors are unchangeable are
most predictive of a sense of higher stress can assist the
counselor in conceptualizing possible therapeutic directions for
treatment. When this attributional style can be reformulated it
can have an affect on the entire process from primary appraisal
(attribution) to secondary appraisal (self-efficacy) to the
engagement of coping behaviors (problem-focused vs.
emotion-focused) and finally through performance feedback, to
future attributions about stressful events.
LIMITATIONS

In conducting a field study about the effects of attributions on the perception of stress there are many limitations that can affect generalizability. The sample was drawn from specific occupations thought to have a high incidence of burnout indicating higher levels of stress. However, this could be considered a limitation because there was no effort made to recruit subjects from occupations that include a significant degree of physical or environmental stress. Since physical stress is one of the subscales on the ORQ this could have lead to a lower representation of stress than there might be in a more randomized occupational sample. No significant conclusions about cultural or ethnic differences can be made because of the limited representation of cultural or ethnic groups.

A question of reliability could arise not because of the instruments reliability but because of the differences between the instruments approach to measuring the constructs. The ORQ was developed as a generic measure of occupational stress that would apply across different occupational levels and environments. The CDSII assesses the causal attributions an individual makes for a specific event. Even though this can be considered representative
of the attributional style that one would be likely to employ across situations, it could vary.

A possible procedural consideration is the order in which the instruments were completed by the subjects. Because the instruments were not completed in the presence of the investigator the order in which the measures were completed could not be controlled. If the CDSII was completed prior to the ORQ subjects could be sensitized to the perception of stress in the occupational environment by focusing on the specific stressful encounter considered when completing the CDSII. This may have resulted in an increased sense of overall occupational stress. In a field study of this nature it is most practical to use self-report as the method of data collection. Because of this, control over how the instruments are completed and in what order is lost. In addition, the usual risks of distortion of self-report data are present.

In consideration of the size of $R^2$ found in the multiple regression analysis it would appear that a larger sample might have yielded more significant results.
FUTURE RESEARCH

The results of this study seem to indicate that the hypothesized relationship between attributional style and perception of stress could be important not only in the assessment of stress but also in the treatment of stress related conditions. This could be investigated more fully by conducting studies that focus more on process and outcome. It would seem helpful to examine the outcome of interventions focused on the process of changing the attributional styles of subjects. This could be done in a clinical setting by measuring perception of stress and attributional style before and after treatment intervention. In addition, future research could be designed to examine the possible cultural and ethnic differences that would be germane to the counseling process and individual outcomes.

SUMMARY

This study has looked at the relationship of attributions about events and the individual's perception of stress. The purpose was to determine if attributions were predictive of the degree of stress the individual perceives and if there is a
pattern of attributions that in fact differentiate those who perceive high and low levels of stress. In this study subjects from the mental health and education fields were asked to complete self-report instruments measuring the perception of occupational stress (ORQ) and record the attributions that they made for specific stressful events they had experienced in that environment (CDSII). Within the stated limitations of this type of study, it appears that the independent variables, locus of causality, stability, and control are predictive of the level of stress perceived and that those who perceive the cause of events to be more internal, more changeable, and more subject to a greater sense of personal control tend to experience or perceive less stress in the environment.

These findings highlight the social construction perspective that individuals will interact with their environment in a manner that is governed by the attributions and beliefs that help them construct their reality. Because of this dynamic the attributions and beliefs become of central importance in shaping the counselor's focus in working with the client. Logically, therefore, the deconstruction of those attributions and beliefs may be helpful in facilitating the generation of solutions (De Shazer, 1994).
APPENDIX A

Letter of Instruction

Dear Volunteer,

We are conducting a research study at Ohio State University that is examining occupational stress and the causes that people attribute for stressful events. Participation in this study is completely anonymous and if you decide to take part please do not include your name on any of the materials. I am asking volunteers to complete the enclosed questionnaires. They are designed to assess your perception of occupational stress and the meaning that you assign to stressful experiences in this environment.

The materials enclosed are the Occupational Stress Inventory in which you are to complete only Part One (ORQ) and the Causal Dimension Scale II and a Personal Data Form. Completion of these materials will only require 15 or 20 minutes of your time. Please do not write your name on any of these forms. Please return all forms in the envelope in which they came. This envelope has been addressed and stamped for your convenience.

Participation in this project is completely voluntary and you may withdraw at any time. Your participation is strictly confidential and your employer will have no knowledge of your decision. I would like to thank you in advance for your assistance in this project.

Sincerely,

Daniel P. Kendall, M.A. Samuel H. Osipow, Ph.D.
Graduate Student Professor of Psychology
Department of Psychology Advisor
614-846-4556
APPENDIX B

Personal Data Form

Age:______

Sex: M F

Occupation:__________________________

Job Title:____________________________

Length of employment in this occupation:__________

Highest Degree: ________________________

Race of Ethnicity: ___ Caucasian
    ___ African-American
    ___ Asian-American
    ___ Native-American
    ___ Hispanic-American
    ___ Other (please specify)______________

Level of satisfaction with current job: (circle number)

<table>
<thead>
<tr>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

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APPENDIX C

Causal Dimension Scale II

Causal Dimension Scale II

Please describe in one or two sentences a recurring stressful event that has taken place in the last 6 months in your occupational setting.

Please state what you believe the cause or causes were for this stressful event.

Instructions: Think about the reason or reasons you have written above. The items below concern your impressions or opinions of this cause or causes of the stressful event. Circle one number for each of the following questions.

Is the cause(s) something:

1. That reflects an aspect of yourself
   9 8 7 6 5 4 3 2 1 reflects an aspect of the situation
2. Manageable by you
   9 8 7 6 5 4 3 2 1 not manageable by you
3. Permanent
   9 8 7 6 5 4 3 2 1 temporary
4. You can regulate
   9 8 7 6 5 4 3 2 1 you cannot regulate
5. Over which others have control
   9 8 7 6 5 4 3 2 1 over which others have no control
6. Stable over time
   9 8 7 6 5 4 3 2 1 variable over time
7. Inside of you
   9 8 7 6 5 4 3 2 1 outside of you
8. Under the power of other people
   9 8 7 6 5 4 3 2 1 not under the power of other people
9. Something about you
   9 8 7 6 5 4 3 2 1 something about others
10. Over which you have power
    9 8 7 6 5 4 3 2 1 over which you have no power
11. Unchangeable
    9 8 7 6 5 4 3 2 1 changeable
12. Other people can regulate
    9 8 7 6 5 4 3 2 1 other people cannot regulate


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List of References


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