THE UNIVERSITY OF CALGARY

STRESSFUL NEGATIVE LIFE EVENTS, DEPRESSION AND LOCUS OF CONTROL

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AGNES JUDIT TEMESVARY

A THESIS

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DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

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THE UNIVERSITY OF CALGARY FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Stressful Negative Life Events, Depression and Locus of Control", submitted by Agnes Judit Temesvary in partial fulfillment of the requirements for the degree of Master of Science.

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ABSTRACT

The present study investigated the relationship which appears to exist between stressful negative life events and depression, and how locus of control influences this depressive reaction.

Forty-eight subjects were selected from an Alberta Mental Health Services clinic. Subject selection was voluntary, and based upon diagnostic classification, age and gender. All subjects were diagnosed as experiencing an Adjustment Disorder with a Depressed Mood. The subjects comprised two gender groups (24 males and 24 females), and two age groups (20-35 years and 40-64 years).

Three instruments were employed: the Beck Depression Inventory (which evaluates a wide variety of symptoms and attitudes associated with depression); the Life Experiences Survey (wherein the individual subject rates the impact of discrete events that they have experienced); and the Levenson's Multidimensional Locus of Control Scale including the Internal, Powerful Others and Chance Scales (which captures a multidimensional conceptualization of locus of control). These instruments were administered to subjects subsequent to their initial assessments in clinic.

Eight experimental hypotheses were formulated and presented in null form. Three hypotheses related age and gender with depression. Two hypotheses related the number and severity of negative life events with depression. Three hypotheses related locus of control with depression.

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The results of the investigation suggest there is a statistically significant interaction between age and gender and Beck Depression Inventory Scores (P = .032). A statistically significant partial negative correlation was found between the number of Negative Life Events Scores and the Beck Depression Inventory Scores (P = .029). A statistically significant partial correlation was found between the severity of Negative Life Events Scores and the Beck Depression Inventory Scores (P - .025). A statistically significant correlation was found between the Levenson's Multidimensional Locus of Control Powerful Others Scale Scores and the Beck Depression Inventory Scores (P = .003). A statistically significant correlation was found between Levenson's Multidimensional Locus of Control Powerful Others Scale Scores and the Beck Depression Inventory Scores (P = .003). A statistically significant correlation was found between Levenson's Multidimensional Locus of Control Chance Scale Score and the Beck Depression Inventory Scores (P = .020).

In summary, findings of the present study provide support for the view that locus of control is a moderator variable between negative life events and depression. In addition, the findings suggest an interaction between age and gender on depression. Clinical applications and suggestions for future research are also discussed.

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CHAPTER ONE INTRODUCTION

Carbon subjected to heat and intense pressure over time may result in a resilient, priceless diamond or a black inexpensive lump of coal. Nature seems to work her miracles capriciously at times although we know that conditions must be precise and optimal to yield the most magnificent of rewards. What of individuals subjected to the stresses of everyday life? What early and on-going events influence their ability to not only withstand stress, but to be strengthened and tempered by it?

It is almost impossible to turn on a television or radio or open a newspaper in our fast-paced, modern world without being bombarded by disaster, large and small scale catastrophes, war, man's inhumanity in dealing with his fellows, and on and on...

More and more individuals seem to be seeking professional help in order to cope with the effects of life's stresses. These individuals are found in all walks of life, across the age continuum, and in both sexes. Selye (1956) concluded that "stress is part of life, it is a natural by-product of all our activities". It is commonly held that an optimal level of stress enables the individual to perform to his/her maximum capacity. At what level does stress become overwhelming to the point that the individual can no longer cope and may experience a variety of responses which include negative changes in mood, physiological symptoms, feelings of hopelessness, guilt, failure and decreased levels of self-esteem, motivation satisfaction, interest and possibly suicidal preoccupation. All of the above-mentioned symptoms are included under the broad umbrella of depression. Why are some individuals able to cope with levels of stress that debilitate others? History is replete with such examples. The present study is not concerned with heroes from the past, but with contemporary, ordinary individuals who are experiencing stressful negative events in their own lives. This study investigates the relationship which appears to exist between stressful negative life events and depression, and how locus of control influences this depressive reaction. A critical question revolves around the magnitude and impact of a single stressful negative life event equals or outweighs the cumulative impact of several less severe negative life events. Consequently, three instruments were employed in this study: The Beck Depression Inventory (which evaluates a wide variety of symptoms and attitudes associated with depression); the Life Experiences Survey (wherein the individual subject rates the impact of discrete events that they have experienced); and the Levenson's Multidimensional Locus of Control Scale including the Internal, Powerful Others and Chance Scales (which captures a multidimensional conceptualization of locus of control).

The answers to all of the above questions have practical implications for the clinical treatment of an individual experiencing a depressive reaction. For example, is it clinically more relevant to investigate the precipitating negative life

event(s) or to understand and perhaps assist the individual in modifying his/her cognitive set. Various clinical studies have identified distinctive cognitive patterns of depressed patients (Beca, 1967, 1967; Kovacs & Beck, 1978). Revising Seligman's (1975) learned helplessness theory, Abramson, Seligman and Teasdale (1978) identified two groups of individuals and their susceptibility to a depression based on their perception of their ability to control outcomes, whether positive or negative. Abramson et al. (1978) have labelled these groups "internals" and "externals". Sarason and Johnson (1978) demonstrated that it is the "external" individual who feels he/she has no control over events who is most susceptible to the effects of life stress and runs the risk of developing mental health problems. Cromwell, Butterfield, Brayfield and Curry (1977) found that "internals" (those who perceive events as being controllable by their own actions) seem better equipped to survive their crises, and become less depressed than "externals".

The present study made use of a clinical population seeking help at Alberta Mental Health Services. It attempts to address the above-mentioned questions by investigating the relationship between stressful negative life events, depression and locus of control, as it pertains to two distinctly different age groups (ages 20-35 and 40-65). The study also explores the potential for clinical implications and future research.

CHAPTER TWO

LITERATURE REVIEW

A Brief General Review on Stress

Stress is a term that has been linked to various concepts and different scholars have provided different definitions in their attempts to operationalize this phenomenon. Thus, for example, Selye's (1956) focus on the "nonspecific general adaptation syndrome" forces an extreme response-based definition, and the exact nature of the stressor becomes largely irrelevant. One of the central issues in research on stressful life events was suggested by an apparent paradox used by this author which referred to the conclusion "stress is part of life, it is a natural by-product of all our activities" (p. 299).

In contrast, Lazarus' (1966) focus on cognitive appraisal presumes that specific types of information are operative in evaluating a particular stimulus as stressor. According to this author, at the psychological level, mediational processes involving evaluation and judgement are crucial to the stress reaction. Lazarus explains that psychological stress requires a judgement that environmental and/or internal demands exceed the individual's resources for managing them. Furthermore, this judgement and the individual's efforts to manage and shape the stress experience are conceptualized in terms of two interacting processes: appraisal and coping (Lazarus, 1966; Lazarus & Folkman, 1982). It has been pointed out by several authors (Antonovsky, 1979; Henry & Stephens, 1977; Roskies & Lazarus, 1980) that health outcomes are a product of effective coping rather than simply a consequence of the presence or absence of stress. The term 'coping' was defined by Lazarus (1966, 1981) as one's efforts to manage environmental and internal demands and conflicts among demands. It is the belief of the present writer that the theoretical context of the present research should focus on the dynamic constellation of thoughts and acts rather than focusing on relatively static moderator variables such as personality traits (Kobasa, Hinkler & Maddi, 1979), motive patterns (McClelland, Floor, Davidson & Saron, 1980), or historical events in the individual's life (Brown & Harris, 1978).

One's theoretical perspective regarding the concept of stress leads to a certain type of psychological intervention designed to reduce the psychological and somatic costs of stress by facilitating effective coping (Meichenbaum & Jeremko, 1982). A growing number of studies indicate that cognitive-behavioral interventions may be a promising method of preventing and treating some stress-related disorders (Meichenbaum & Jeremko, 1982). However, it appears quite apparent that the continued advancement of an intervention approach to stress management will depend heavily on the development of reliable methods of assessing stressful life events from a multidimensional perspective. It is the purpose of this study to explain the relationship between stressful life events and depression.

Stressful Life Events

The nature and assessment of stressful life events/life changes have been studied both from the pragmatic standpoint of those who are responsible for mental health practice, those anxious to help in the solution of practical problems that arise in coping with stressful situations, and from the scientific standpoint of psychologists who are primarily interested in theoretical issues.

For the purpose of the present study, Holmes' and Rahe's (1968), operational definition of stressful life event is employed. According to these authors, the term "stressful life event" refers to "those events experienced within the last six months that are requiring some degree of change or alteration in the person's life situation" (p. 213).

The role of stressful life events in the etiology of various diseases has been studied for the last 25 years. Derived from William B. Cannon's (1929) early observations of how bodily changes relate to emotions and Adolph Meyer's (1951) interest in the life chart as a tool in medical diagnosis, the field was first given formal recognition at the 1949 Conference on Life Stress and Bodily Diseases. Since then, several groups of investigators (Holmes & Rahe, 1967; Dekker & Webb, 1974; Vinocur & Selzer, 1975) have adopted this general framework in long-term projects investigating stressful life events.

In general, the purpose of life events research is to demonstrate a temporal association between the onset of illness and

a recent increase in the number of events that require socially adaptive responses on the part of the individual. The impact of such events is presumed to be additive, i.e., the more events that are experienced, the greater the expectation that these events will produce a negative effect (Rabkin & Struening, 1976). The underlying assumption is that such events serve as precipitating factors. Onset of psychiatric as well as physical disorders and accidents have been studied in both retrospective and prospective designs within the life events framework (Rubin et al. 1971; Rahe, 1972; Dohrenwend & Dohrenwend, 1974). It is the purpose of the present study to determine whether or not there is a significant relationship between the number of Negative Life Events and depression. In addition, the present study aim at exploring whether there is a significant relationship between the severity of Negative Life Events and depression.

In the present context, the term "social stressors" refers to personal life changes, such as bereavement, marriage, or loss of job, which alter the individual's social setting (Rabkin & Struening, 1976, p. 1014). A more specific definition is proposed by Holmes and Rahe (1967), who define as social stressors any set of circumstances the advent of which signifies or requires change in the individual's life pattern (p. 213). According to this definition, exposure to social stressors does not cause disease but may alter the individual's susceptibility at a particular period of time and thereby serve as a precipitating factor.

During recent years, numerous studies (Dohrenwend & Dohrenwend,

1974; Holmes, 1970; Rahe & Lind, 1971; Sarason, Johnson & Siegel, 1978; Vinokur & Selzer, 1975), have investigated the relationship between life stress and susceptibility to physical and psychological problems. Most of these studies have been based on the assumptions that (a) life change requires adaptation on the part of the individual which is stressful, and (b) persons experiencing accumulative life changes (e.g., divorce, job promotion, residence change) during the recent past (6 months - 1 year), are susceptible to physical and emotional problems.

There is considerable evidence that a relationship exists between life stress, operationally defined in terms of self-reported life changes, and physical illness (Dohrenwend & Dohrenwend, 1974). Rahe and Lind (1971) have reported a relationship between life stress and sudden cardiac death. Holmes (1970) and Rahe (1968) both found a relationship between life stress and major and minor health problems. Wyler, Masuda and Holmes (1971) have also shown that life change is related to seriousness of chronic illness. Vinokur and Selzer (1975) contend that life stress is related to the occurrence of depression, anxiety, and tension. Sarason, Johnson and Siegel (1978) found negative life change to be related to depression.

Assessment Studies

Research on life stress has focused attention on the role of individual differences that, through interaction with environmental events, influence the adjustment of the individual.

Most investigators, working in the field of life events research, have adopted the original or a modified form of a checklist developed by Holmes and Rahe (1967), which is known as the Schedule of Recent Experience (SRE). Although the development of the SRE represents a valuable initial attempt at the quantification of stress as it pertains to life change, its adequacy has been questioned on several theoretical grounds (Rabkin & Struening, 1976). The SRE was based on the assumption that life changes, per se, are stressful regardless of the desirability of the events experienced. Therefore, both desirable and undesirable events are combined in determining the life stress score. On the other hand, several writers have questioned the logic of combining positive and negative events (Brown, 1974; Mechanic, 1975; Sarason, De Monchaux & Hunt, 1975). It has been argued that undesirable events (e.g. death of a close family member) may have a very different, and possibly a more detrimental effect on individuals than positive events (e.g. outstanding personal achievement). It seems reasonable, therefore, to consider thinking of life stress, primarily in terms of events that exert a negative impact on the individual.

Vinokur and Selzer (1975) have provided information that has a bearing on the issue of negative life changes. These investigators used a specially modified version of the SRE which yielded separate values for positive and negative life changes. Several stress-related measures such as self-ratings of depression, anxiety, and tension were used, as well as measures of aggression, paranoia, and suicidal proclivity. The study indicated that stress related

measures of affect and symptoms correlated selectively with negative, as opposed to positive, life events.

Another approach to measuring life stress was taken with the Life Experiences Survey (LES) (Sarason, Johnson & Siegel, 1978). The survey asked respondents to indicate stressful life events such as those pertaining to relationships, finances, and physical health experienced during the recent past (6 months - 1 year). It differs, however, from the SRE in two respects in that, in addition to quantifying events experienced in the recent past, respondents were required to categorize each event as having been desirable or undesirable and to rate the degree of personal discomfort related to the event. Thus the LES provides for individualized ratings of the impact of the events experienced and for a separate assessment of positive and negative life changes. It was found that the LES correlated with negative but not with positive life changes.

In agreement with the above two studies, Brown (1974) supported the idea that negative life events are more stressful than the positive ones. Zeiss (1980) also demonstrated a high correlation between life scores and aversiveness of events. In addition, Freden (1982) pointed out the connection between negative life events and its negative effect on the individual.

In summary, the above studies have assessed both positive and negative life changes and have found that it is typically negative, rather than positive change, that correlate significantly with stress-related dependent measures.

Several critical issues regarding the evaluation of the

stressful life events and the measurement of their impact on an individual have been pointed out (Caplan, 1974; Cassel, 1975; Holmes & Rahe, 1967; Dohrenwend & Dohrenwend, 1969).

An issue in life events research that warrants attention is the possibility of an interaction between life changes and other factors, such as availability of social support systems to serve as a protective buffer for the affected individual.

As defined by Caplan (1974), social support system consists of enduring interpersonal ties to a group of people who can be relied upon to provide emotional sustenance and resources in times of need, who provide feedback, and who share similar standards and values (p. 1017). Ideally, one belongs to several supportive groups situated at home, at work, in church, and in a series of recreational or avocational environments.

Cassel (1975) has observed that deficiencies in support systems will not in themselves contribute to the individual's susceptibility to physical or mental illness in the absence of social stressors. The converse is also possible in that social stressors in the presence of strong social support systems will have only minor effects on health.

Another design issue concerns the advisability of controlling the variables of socioeconomic status and ethnicity in sample selection and data analysis. Holmes and Rahe (1967) suggest that respondents grouped by social class, or ethnic background, rank life events similarly in terms of their perceived impact or magnitude. More direct evidence has been compiled by Dohrenwend and

Dohrenwend (1969), who addressed the issue of a possible relationship between class, ethnicity, and a differential experience of life events. After reviewing a wide variety of published studies on class and ethnic differences, they concluded that both class and ethnicity influence tolerance of stressful events. They found that members of lower socio-economic classes experience more severe, though not more frequent, stressful events than do middle-class members. This is due to the lower class perception of these stressful events as being social losses rather than the middle-class members' perception of the same event as being undesirable. Within racial identity, stressful situations are both more frequent and more severe for blacks than for whites. Thus far, such relationships have been only tentatively explored.

Further development in the study of stressful life events entails the examination of the circumstances under which such events occur or do not occur. "Mediating factors" are those characteristics of the stressful event experienced by the individual, and of his social support system that influence his/her perception of or sensitivity to stressors (Rabkin & Struening, 1976, p. 1014).

"Some people develop chronic diseases and psychiatric disorders after exposure to stressful conditions, and others do not (Hudgens, 1974, p. 119). Indeed, most people do not become disabled even when terrible things happen to them, as Hudgens (1974) has observed. Exposure to stressors alone is almost never a sufficient explanation for the onset of illness in ordinary human experience. Therefore,

other factors that influence the impact of stressful experiences require consideration. These fall under three broad categories, characteristics of the stressful situation, individual biological and psychological attributes, and characteristics of the social support systems available to the individual that serve as a buffer.

In the present context, the term "onset of illness" is defined by the appearance of clinical symptoms of disease (Rabkin & Struening, 1976, p. 1014). Before reviewing these mediating factors, it is important to emphasize both their cumulative impact and the reciprocal relationship between them: that is, the more rigorous and severe the external situation, the less significant are social and individual characteristics in determining the likelihood and nature of response (Rabkin & Struening, 1976). When conditions are sufficiently harsh, as in some wartime situations, prolonged sensory deprivation, or concentration camps, breakdown is virtually universal and individual variations are reflected only in the length of time before the reaction occurs and perhaps in subsequent recovery time. When the stressful situation is less severe, study of social supports and individual characteristics contribute to an understanding of why some people become ill, such as high serum cholesterol in relation to myocaridal infarction, and others do not. Finally, extreme environmental conditions can induce disability even in those who do not have social or personal deficits. Their vulnerability or capacity to tolerate stress alone, in the absence of stressful conditions, does not precipitate chronic disease or psychiatric disorder (Rabkin & Struening, 1976).

Some individuals' peculiar idiosyncratic makeup predisposes them to be more susceptible to acute stressors. The characteristics of stressful events that have been found to influence illness onset include their magnitude (departure from baseline conditions), intensity (rate of change), duration, unpredictability and novelty. The most widely studied of these variables is magnitude, which has been investigated among survivors of extreme experiences such as internment in concentration camps or as prisoners of war. A linear correspondence has been observed repeatedly between magnitude of the stress and the extent of both psychiatric and physical disability (Wolf & Goodell, 1968).

It is now widely agreed that stressors of sufficient intensity and duration will induce an acute stress reaction in all so exposed, regardless of predisposition. Although there is less consensus concerning long-term or permanent disabilities, recent longitudinal data from concentration camp survivors have shown that profound and protracted stressful conditions may have irreversible effects on all (Horowitz, 1976).

Speed of change, prolonged exposure, lack of preparedness, and lack of prior experience have each been found to heighten the impact of stressful life events (Miller, 1976).

Cumulatively these findings suggest that the formal properties of stressors constitute a significant source of variation affecting their influence on individuals.

A critical factor in evaluating the impact of stressful events is the individual's perception of them. Such perceptions depend on

personal characteristics determining the appraisal of the significance of potentially harmful, challenging, or threatening events. It is this cognitive process which differentiates a stressor from a stimulus and which determines the nature of the stress reaction and subsequent coping activities (Groen, 1969).

Following Dohrenwend's (1961) conceptualization, the perception of stressful events is mediated by two broad categories of variables, one consisting of personal or "internal" factors, and the other of interpersonal or "external" factors. According to Dohrenwend:

"The social and psychological counterparts to be advanced here will be considered under two general headings: first, those mediating factors which determine the amount of "external" constraint associated with the stressor; second, those that determine the amount of "inner" constraint associated with the

stressor for the individual in stress situations" (p. 296). An example of external constraint would be that produced by the status of the individual as based primarily on occupation and ethnic background. An example of internal constraint would be the confrontation of the individual's self-image or self-concept by a particular stressor. Dohrenwend summarizes this position well when he states:

"The stressor, in association with mediating factors, then produces inner and external constraint. Then person's subsequent attempts to adapt to constraint are represented by what is termed his adaptation syndrome. A central assumption

of the theory is that the adaptation syndrome represents efforts by the individual to reduce constraint" (p. 296).

Personal factors include biological and psychological threshold sensitivities, intelligence, verbal skills, morale, personality type, psychological defenses, past experience and a sense of mastery over one's fate. Demographic characteristics such as age, education, income, and occupation may also contribute to the individual's evaluation of stressful conditions and his response to them (Rahe, 1972).

Uhlenhuth et al. (1974) found an association between symptom severity and recent life stress. They reported relationships among self-related symptom intensity, life stress of recent undesirable events, and demographic characteristics in a sample of urban adults. The results of this study suggest that younger persons reported higher symptom intensities than older respondents, and the number of stressful events was higher among younger persons than among older persons.

Holmes and Masuda (1974) and Dekker and Webb (1974) also found that young adults, aged 20 to 30, reported twice as many life changes as those over 60. Consequently, throughout the age range sampled in these studies, a significant inverse relationship prevails.

The effects of most personal variables in mediating stressful conditions are fairly obvious: persons with more skills, assets, and resources and with more versatile defenses and broader experience tend to fare better. In general, the more competence

individuals have demonstrated in the past, the more likely it is that they will cope adaptively with a current stressor. The more experience they have had previously with a particular stressor, the greater the probability that their present responses will be effective (Miller, 1977).

The correspondence of personality type to stress reactions and to vulnerability to disease is less clear-cut. Over the years, investigators have proposed several models to account for the impact of intrapsychic factors on bodily function, such as Adler's concept of organ inferiority (Ansbacher & Ansbacher, 1956), Alexander's idea that specific emotional conflicts are determinants of disordered function in a particular organ. In his model a stressful life event by itself would not trigger the disease process without a reactivated unresolved conflict and a sensitized organ system (Alexander, 1968). Dunbar's notion conceived that personality constellations are associated with specific psychosomatic disorders (Dunbar, 1943). With the passage of time and accumulation of experience, these approaches to the understanding of personality and illness have become less popular. Investigators who have continued to work within this tradition have turned their attention to the delineation of broad life styles and behavior patterns rather than specific intrapsychic constellations and conflicts. A major focus within this framework has been on personal correlates of premature coronary heart disease, myocardial infarction, and sudden death. Studies of the behavior of individuals prone to coronary disease have identified distinctive behavioral and characterological styles

which may serve as predisposing factors (Friedman & Rosenman, 1975).

The above studies implicate the "type A" behavior pattern. Some of the predisposing characteristics of such a personality type are aggressive behavior, hard-driving and goal directed, ambitious and compulsively striving to achieve goals that incorporate power and prestige (Menninger & Menninger, 1936; Dunbar, 1943; Kemple, 1945).

Rosenman and Chesney (1980) observed Type A individuals to be orderly, outgoing, hyperalert, fast paced, competitive, tense, unrelaxed, impatient, and time conscious.

Another broad set of contingencies, or mediating variables, in the stress equation which may be considered social or transactional in nature consists of the buffers and support systems accessible to the individual in his environment. The social position individuals or groups occupy in a community can influence their experience of stress and presumably their vulnerability to a broad range of chronic diseases (e.g., cancer) and mental disorders (e.g., schizophrenia. Graham and Stevenson (1963) suggest that the greater the life dangers, the greater the vulnerability to disease and the more serious the disease that develops.

It was suggested that while the effects of exposure of stressful life events may be reduced for those who are effectively embedded in social networks or support systems, they are commonly exacerbated by deficiencies or impairments of such systems. Three such categories - social isolation, social marginality (minority membership), and status consistency - may be considered in this

context (Caplan, 1974).

Urban sociologists (Faris & Dunham, 1939) recognized many years ago that people in deteriorating areas of the central city had disproportionately high rates of mental disorders. More recently, social isolation has been delineated as a major factor in increased risk of disease (Holmes, 1956). There is now considerable evidence to suggest that those who live alone and are not involved with people or organizations have, for this very reason, a heightened vulnerability to a variety of mental disorders, such as schizophrenia (Linsky, 1970).

While social isolation is perhaps the most extreme example of impairment of one's position in the community, marginal social status due to membership in a low status group or simply in one that constitutes a numerical minority in the area has also been associated with increased health risk (Linsky, 1970).

The third social variable, status inconsistency, refers to the situation where an individual occupies two or more distinct social statuses or roles that involve incompatible social expectations. For example, mother-married-adult are three compatible statuses, in contrast to mother-unmarried-adolescent (Dodge & Martin, 1970).

Studies (Abramson, 1955; King & Cobb, 1966; Meile & Haese, 1969) of individuals have dealt with observed discrepancies between education and income level, or education and occupational rank, which were presumed to generate role conflict. While a few investigators (Hinkle & Wolff, 1957; Dohrenwend & Dohrenwend, 1974) have failed to find an association between status inconsistencies and measures of health, Lehman, Schulman and Hinkle (1967) have found one, using different kinds of samples (e.g., 2600 New York City semi-skilled workers) and measure (number of illness episodes recorded) of health.

In summary, the literature concerning variables that mediate the impact of stressful events in individuals suggests that life stress seems to be related to a host of variables that reflect health status, adjustment, and effectiveness of performance. Life change, and particularly negative life changes, have been linked to many physical indicators including heart disease (Rahe & Lind, 1971), complications associated with pregnancy and birth (Nuckolls, Cassel, & Kaplan, 1972), multiple sclerosis (Rahe & Arthur, 1978), and diabetes (Holmes & Masuda, 1974). In addition to correlating with physical illness, life stress has been found to correlate with psychological reactions including anxiety, aggression, depression, social maladjustment, paranoia, and suicidal tendencies. Negative life changes are often correlated with poor academic performance, ineffectiveness in work situations, and job dissatisfaction (Sarason & Johnson, 1978).

Stressful life events also have a role as a precipitating factor, influencing the timing of illness onset.

Lloyd (1980) reviewed studies examining the hypothesis that life events may precipitate a depressive disorder (e.g., reactive depression). Although some contradictory results exist, the majority of studies demonstrate that depressed patients experience more stressful events in the months that precede the onset of their

disorder than do normal controls (e.g., Parkes, 1964; Frost & Clayton, 1977; Paykel, et al. 1970).

One of the specific events that has been implicated as a possible precipitant of depression is the object loss or death of a loved one. To establish such a relationship, several studies (e.g., Brisco & Smith, 1975; Birtchnell, 1970) have sought to demonstrate that patients suffering from depression have a greater incidence of recent bereavement or separation events than do non-depressed controls. Parkes (1964), for example, showed that the death of a spouse could precipitate a depression as hospitalized depressives were six times more likely to experience such a loss in the six months preceding their depressive onset than the frequency of occurrence in the general population.

Briscoe and Smith (1975) also believed that the death of a spouse could precipitate a depression because bereaved depressives emerged as a distinct group when they were compared with divorced patients and with hospitalized depressives without any preceding life stress.

Birtchnell (1970) also demonstrated that the death of a parent could serve as a precipitant for depression because he found a significantly increased incidence of parental death among 500 inpatients during the five years prior to their admission. Frost and Clayton (1977) also examined the incidence of death of an immediate or extended relative among psychiatric patients. However, they did not find a significant increase in the incidence of depression in the six months to one year prior to admission for

these patients when they were compared with a matched non-psychiatric control group. Nevertheless, when recently bereaved patients studied in depth, demonstrated that those who had lost a spouse suffered a severe reaction which seemed to precipitate the hospitalization (Frost & Clayton, 1977). Other severe reactions in both patients and controls were noted in persons who had lost either a parent or a child. Loss of a sibling, however, rarely evoked such a severe reaction.

An additional study by Clayton et al. (1972)indicated that the depressive potential of bereavement may depend in part on whether substitute forms of emotional support are available to the survivor. These authors conducted a prospective study of persons who had suffered a recent loss to determine whether or not they were a high-risk group for the development of depression. They followed up 109 recently bereaved persons and found that although 35% complained of symptoms similar to those of a primary depression, most of the group remained depressed for only two or three months, unless they had no other close friends or family ties.

Other investigators (Sethi, 1964; Adamson & Schmale, 1962; Akiskal & McKinney, 1975) have chosen not to limit themselves to bereavement events alone, but have examined all separation events. Sethi (1964) studied all separation events in the six months prior to the onset of symptomatology in a group of general psychiatric patients. He compared highly depressed with mildly depressed patients and found that 62% of the former reported at least one separation event, compared with only 14% of the latter group. He

also noted a greater occurrence of both a childhood and a recent separations in the highly depressed group than in the mildly depressed group. This prompted him to speculate whether adult separation may serve as a trigger mechanism in those already predisposed by childhood loss. The findings of Adamson and Schmale (1962) may support such a hypothesis. These researchers studied the six month period prior to hospitalization and found that a loss event could be identified in 45 of 48 patients. However, only five of these patients experienced an actual loss, eight a threatened loss, and 33 patients had a "symbolic loss". A "symbolic loss" is one which is of little current significance in itself, but which assumes importance because it triggers or reawakens a subconscious conflict involving actual or fantasized past losses, particularly deaths. This study is difficult to evaluate because it lacks a control group and a blind review process (the experimenters knew of the "symbolic loss:), but suggests that loss events are related to impaired functioning and derive part of their harmful impact by resurrecting vulnerabilities left by earlier losses. This may help explain why some persons, but not others, become depressed after a loss event. Akiskal and McKinney (1975) have also noted that evidence supporting the hypothesis that object loss can be a precipitant of depression had come from studies that had identified separation or "exit" events (involving the departure of a person from the social field of the subjects) as one of the more common events experienced by depressed patients.

In addition to those studies examining the specific event of

bereavement or of object loss, many controlled studies have investigated the occurrence of a number of potential stressor events among depressed patients.

For example, one study by Paykel et al. (1970), reported that depressed patients had an increased frequency of the following eight events: (1) marital arguments; (2) marital separations; (3) starting new type of work; (4) change in work conditions; (5) serious personal illness; (6) death of immediate family member; (7) serious illness of family member; and (8) family member leaving home. Controls reported an increased frequency in four events, although none reached statistical significance: (1) engagement; (2) promotion; (3) leaving school; and (4) birth of child (for father only). These events are obviously more positive in nature than those accumulating among depressives. The authors also investigated sub-classifications of events and found that both exit events and undesirable events were significantly more frequent among depressives.

Thompson and Hendrie (1972) reported that their depressed inpatients had a significantly higher mean life change than either a staff control group or a polyarthritic control group. These investigators were also interested in whether they could confirm the existence of two types of depression, one related to stress (reactive) and one related to a genetic predisposition (endogenous). They postulated that patients diagnosed as suffering from reactive depression would be expected to show a greater amount of stress than would those with endogenous depression. The distribution of stress

scores obtained, however, were basically unimodal. Although reactive depressives had higher stress scores than the endogenously depressed, the difference was not significant. Thus, these authors found little evidence which could differentiate between patients on the basis of whether or not their disorder seemed to be a reaction to a serious life event. They concluded that life events are important in the genesis of all depression.

In contrast to the above noted studies, there are others with less positive results (Cadoret, et al. 1972; Forrest, et al. 1965; Hudgens, et al. 1967). Cadoret et al. (1972) for example, studied 100 patients who fell into one of two subgroups: (1) those with an early onset of depression (starting before age 40 years) and (2) those with a late onset of depression (starting after age 40 years). When all patients were compared with controls drawn from relatives, the patients had an increased frequency of negative life events. Despite the increased frequency, the authors did not conclude that a causal relationship was indicated. When the precise temporal relationship between the stressor events and the onset of depression was examined carefully, only five of the 26 patients who reported such a loss showed the symptoms after the event. Only an additional seven people experienced the event and the depressive symptoms almost simultaneously, whereas 14 patients had shown symptoms before the event's occurrence. The temporal association of events and depression, therefore, was consistent with a causal relationship in 12 patients at most; and of these, 11 were early onset depressives. It was concluded that although patients experienced more negative
events than controls, the events often followed the onset of symptoms and were indicative of causal relationship. However, "early onset depressives" had a higher incidence of personal losses or threats of loss (loss of home, job, or relationship) than the "late onset depressives", and the possibility that precipitating factors may have been involved for the "early onset" group was not precluded.

In summary, the majority of studies demonstrate a significant increase in frequency of negative events among the depressive groups. Those studies that report negative or partially negative results appear to differ in important ways that seem to account for the discrepant findings. Discrepant results seem to be related to methodological variations of the following types: (a) type of comparison group selected, (b) type of event included for study, and (c) time period examined (Lloyd, 1980).

The results of the above-quoted studies suggest a link between the occurrence of stressful life events and depression.

As noted previously in this review, a stressful life event refers to "those events experienced within the last six months that are requiring some degree of change or alteration in the person's life situation" (Holmes & Rahe, 1967, p. 213).

Depression

The following section of this literature review will discuss two models of depression: Beck's Negative Cognition and Seligman's

Learned Helplessness. However, prior to this discussion a brief description of Adjustment Disorder with Depressed Mood, the subtype of the depressive syndrome utilized in the present study will be presented.

The clinical entity employed in the present study has currently been placed in the Adjustment Disorders category (Diagnostic and Statistical Manual of Mental Disorders, third edition, 1980). Specifically, this entity is Adjustment Disorder with Depressed Mood.

Adjustment Disorders are defined as "maladaptive reactions to an identifiable psychosocial stressor that occur within three months after the onset of the stressor" (DSM III, p. 299). Adjustment Disorder with Depressed Mood are defined as follows: "This category should be used when the predominant manifestation involves such symptoms as depressed, tearfulness, and hopelessness" (DSM III, 1980, p. 301).

The Adjustment Disorder with Depressed Mood category has been utilized in the study because this entity has been shown to have a causal relationship to stressful life events.

Prior to discussing the theoretical approaches to depression, a consideration of two aspects of the stressor (i.e., stressful life event, depression) relationship is in order. First, depressive disorders have been traditionally classified into reactive and endogenous categories. Reactive depressions are characterized by acute reactions to identifiable environmental stressors, whereas endogenous illnesses develop insidiously in older patients in the

absence of discrete stress. Recent accounts have indicated, however, that depressive disorders, irrespective of type, are often associated with stressful events and that the determinants may involve various degrees of stress rather than their discrete presence or absence (Depue & Monroe, 1978; Kendall, 1978; Paykel, 1974).

The second aspect pertains to the life-events research into depression. A considerable amount of data has been collected indicating that life events of various types are experienced with a greater-than-expected frequency before the onset of depressive disorder and reactive depression (Brown, Harris & Peto, 1973; Paykel, 1974; Paykel, Myers, Dienelt, Klerman, Lindenthal & Pepper, 1969). A recent study by Paykel (1978) reported that risk for psychiatric illnesses is greater for stressful than non-stressful events. The majority of individuals experiencing these events do not develop clinical depression. It is suggested therefore that certain characteristics of depressed people (anomalous cognitive schemata perception of control deficit, lack of specific internal and external coping abilities) may account for their responses to stress (Beck, 1974).

There are a number of theoretical models of depression. Two such models are relevant to the association between encountered stress and increased symptomatology. The first approach, Beck's theory of Negative Cognition, emphasizes the depressive's anomalous cognitive set of schema that leads to irrational and exaggerated cognitions. Stressor events are seen as triggering or reactivating

this latent biased information processing structure. In the second approach, Seligman's theory of Learned Helplessness, emphasis is given to the depressed person's perceived or actual loss of control over aversive stimulation. Characteristic perceptual anomalies and coping deficits render the depressive vulnerable to inadequately meeting environmental demands.

Beck: "Negative Cognitions"

The primary architect of the theory of anomalous cognitive schemata is Beck (1967, 1974), Kovacs and Beck (1978). This important account proposes that the depressed person has an irregular cognitive schema that predisposes her or him to view the self, the environment, and the future in a negative manner. Maladaptive conclusions, irrational assumptions, rumination over perceived failures, and inflexible expectations and evaluations of behavior characterize the biased "depressogenic" structure. Though external stressor events may be the precipitating factors, it is the distorted perceptions and interpretations of these occurrences that lead to depressive symptoms. The proposition is that depressives' faulty schemata are developed through previous life experiences, particularly from the biased appraisals of significant others (Beck, 1974; Becker, 1974).

Beck's model suggests that stressors activate or trigger the latent anomalous schema that results in inaccurate perceptions of reality and enhanced depressive symptomatology (Beck, 1967).

Therefore depressives are more likely to exaggerate the stressor aspects of a situation and to devalue subsequent efforts to deal with the demand. The cognitive distortion leads to the manifestation of depressive symptoms including a loss of self-esteem, self-blame, indecisiveness, lowered affect, and reduced interaction with the environment. Given a series of perceived personal failures, the depressive's expectation of future successful negotiations with the environment is attenuated. In essence, the model proposes that acquired cognition structures leave the person vulnerable to certain idiosyncratically defined stressful situations (e.g., loss of significant other, failure to obtain a desired goal, etc), and that a subsequent encounter with an event of this type actuates a progressive downward spiral of depressive conditions and other symptoms.

Accumulated clinical wisdom has identified distinctive cognitive patterns of depressed patients (Beck, 1967; Kovacs & Beck, 1978). In addition, considerable research evidence is presented in support of this theory involving studies which were designed to manipulate, experimentally, successful and failure experiences in depressed and non-depressed college students and patients. Procedural methods required subjects to respond to experimental tasks that purportedly measured abilities such as "perceptual vigilance", "social intelligence", and "therapeutic talent". Insofar as these tasks elicit ego threat and interpersonal anxiety (Endler & Okada, 1975), they may be considered to be mild forms of stressful situations.

In a study by Hammen and Krantz (1976), depressive female college students who had responded to an experimental task (completing the Beck Depression Inventory, developed by Beck et al. 1961, and the Life Events and Attribution Scale, developed by Cochrane and Robertson, 1973) reported lower expectations about their future performance and stronger negative reactions to failure than non-depressed subjects. Similarly, depressed outpatients worked as hard and performed as well on a laboratory task as non-depressed subjects but rated the probability of future success lower (Loeb, Beck & Diggory, 1971). With regard to recall of events, depressed individuals recalled negatively toned information quicker and easier than positive information (Lloyd & Lishman, 1975), and depressed students consistently underestimated the number of times they answered items correctly on an ego-involving task (Buchwald, 1977; Wener & Rehm, 1975).

In a more detailed experiment conducted by Nelson and Craighead (1977), depressives were accurate in their recall of punishment delivered at a low rate, but were significantly higher in their estimates than normals, who underestimated the amount. At a high rate of reinforcement, however, depressed subjects underestimated the amount of positive feedback and were significantly lower in their estimates than non-depressed subjects. A replication study employing clinically depressed patients supported the depressives' biased recall of positive feedback at high rates (DeMonbreun & Craighead, 1977).

The bulk of empirical evidence supports Beck's cognitive schema

theory. Though the model is flexible insofar as it accounts for a large proportion of depressive phenomena, certain aspects of the account are difficult to refute because of a lack of specificity (Blaney, 1977). For example, greater precision is required in identifying the factors influencing the so-called "triggering" process whereby stress gives rise to depressive cognitions that subsequently result in enhanced symptoms. Beck appears to be referring to a partial collapse of certain cognitive functions following stressor periods which may be a protective maneuver to ward off excessive arousal.

It was suggested by Neufeld and Mothersill (1975), that because of the emphasis on situational specificity, the identification of potential stress-inducing event categories (defined idiosyncratically) appears to be an important enterprise. Assessment techniques that register the importance of situational categories as the source of the depressive reaction and register the degree and mode of symptomatic response (negative forecasting, self-blame, etc.), need to be developed. Information concerning both the characteristic cognitive processes of the individual and the environmental event that precipitated the depressive response may prove to be important in the treatment and prevention of depression. Theoretically, severity of depression may be related more to a situation-specific versus a non-situational dimension (Neufeld & Mothersill, 1975).

A second approach to a stress-depression link considers the role of perceived and actual loss of control over environmental

events. Lack of control is a significant characteristic of encountered stress (Geer, Davidson & Gatchel, 1970; Glass, Reim & Singer, 1971; Houston, 1982; Neufeld & Thomas, 1977; Weiss, 1971). Several accounts note the relationship between lack of control and depression.

Seligman: "Learned Helplessness Model"

Seligman's (1975) learned helplessness theory does not deny the importance of cognition in depression but narrows the cognitive distortion to the perception that responses emitted to deal with an environmental event are independent of the outcome. For learned helplessness to develop, the expectation that outcomes will also be independent of responses in the future must be acquired. Considerable evidence indicates that, following a period of exposure to uncontrollable aversive stimulation, subjects are typically unsuccessful in coping with experimental tasks compared to subjects who have not experienced lack of control (Hiroto & Seligman, 1975; Klein & Seligman, 1976; Klein et al. 1976; Miller & Seligman, 1975). "Helpless" subjects experience both motivational and cognitive deficits by responding more slowly to the subsequent task and by demonstrating greater difficulty in learning the correct controlling response. In addition, performance deficits are accompanied by a lowering of outcome (Neufeld & Mothersill, 1975).

Reformulated Learned Helplessness

Abramson, Seligman, and Teasdale (1978) presented a reformulation of the learned helplessness model which overcomes many of the shortcomings inherent in the original model of helplessness and depression.

Historically, the learned helplessness model of depression (Garber, Miller & Seaman, 1979; Seligman, 1974, 1975) has emphasized the parallels between the laboratory phenomenon of learned helplessness and clinical depression. The cornerstone of the original learned helplessness model of depression is the learning set that outcomes are uncontrollable by the individual producing the motivational, cognitive, and emotional components of depression. The motivational deficit of restricted initiation of responses observed in helpless subjects parallels the passivity, psychomotor retardation, and social impairment found in naturally occurring depression. The cognitive deficit of failing to learn that responses produce outcomes parallels depressives' "negative cognitive set" (Beck, 1967), which involves the belief that their actions are doomed to failure. Finally, the model claims that depressed affect is a consequence of the belief that outcomes are uncontrollable. There are a number of inadequacies, however, in the original formulation with respect to the symptoms of depressed affect, lowered self-esteem, and self-blame. For example, Abramson, Seligman, and Teasdale (1978) have identified the following inadequacies: a) expectation of uncontrollability is not sufficient for depressed affect since there are many outcomes in life that are uncontrollable but do not negatively affect us; b) lowered self-esteem, as a symptom of the syndrome of depression, is not explained; c) the tendency of depressed people to make internal attributions for failure is not explained; and d) variations in generality, chronicity, and intensity of depression are not explained.

According to the reformulated hypothesis, (Abramson et al. 1978), the kinds of causal attributions people make to explain their lack of control, influence whether their helplessness will result in low self-esteem or whether their helplessness will generalize across situations and time. Attributing lack of control to internal factors leads to lowered self-esteem, whereas attributing lack of control to external factors does not. Furthermore, attributing lack of control to stable factors (e.g., limited intellectual ability) should lead to helplessness deficits extended across time, because they imply to the individual that he will lack the controlling response in the future as well as now. Attributing lack of control to unstable factors (e.g., fatigue, anxiety, or illness) could lead to wide generalization of helplessness deficits across situations because they imply that when he confronts new situations the outcome may again be independent of his responses. Alternatively, attributing lack of control to unstable, specific factors should lead to short-lived, situation-specific helplessness deficits. Finally, contrary to the original helplessness hypothesis, Abramson et al. (1978) assert that depressed affect occurs only in cases

where individuals receive, or anticipate that they will receive, uncontrollable negative outcomes. In addition, the depressed affect associated with the occurrence of unfavorable outcomes will be greater when individuals attribute their lack of control over such outcomes to "internal" rather than "external" factors.

Unlike many other theories of depression, the reformulated learned helplessness hypothesis of depression emphasizes that depression is a syndrome made up of various components which have different etiologies. According to the reformulation, depressed affect is outcome related. Self-esteem, on the other hand, depends on whether or not people attribute their lack of control to internal factors. Finally, the expectation that one's own responses do not control outcome is sufficient to account for the motivational and cognitive deficits in depression.

An important advantage of the reformulated hypothesis is that it can account for cases of depression that do not incorporate all of the symptoms of the syndrome. Beck (1967) for example, speaks of depressed individuals who do not display sad affect yet display other symptoms of depression. According to the reformulation, Beck's depressives, who do not display sad affect, perhaps make an internal attribution for his or her lack of control but believe that although a bad outcome is uncontrollable, it is unlikely to occur (Garber, Miller & Seaman, 1979).

Cognitions versus Helplessness

The overlap between Beck's and Seligman's positions has been reviewed by Blaney (1977). This author maintained that some of the cognitions to which Beck refers appear to be the very ones that might be expected of an individual who is experiencing a state of helplessness. Similarly, Seligman has not discounted the role of cognition in helplessness in humans. Rather, he has indicated that he views the perception of noncontingency as mediating the relation between control-noncontrol and affect.

Self-blame. Beck (1967) claims, for instance, that depressed persons are especially inclined to blame themselves for unpleasant outcomes, even when their responsibility for the outcome is not at all clear. Thus, Beck refers to a kind of negative cognitive set that, if anything, involves attribution of greater control over outcomes to the self. In Beck's model, sometimes depressed persons believe they lack control, and sometimes they believe they have more control than is realistic. The flexibility of Beck's position does appear quite reasonable, given the diversity of depressive phenomena. However, this very flexibility may render it immune to disconfirmation, and thus unsatisfactory as a scientific theory. It was proposed by Blaney (1977) that what is needed is more specification of the roles cognitions play in the stages of development or maintenance of various kinds of depressive conditions. Though Beck has not presented a sufficiently specific theory, his writings contain much material that could be expected to contribute to such a theory.

According to Blaney (1977), Beck's model is more easily disconfirmed than Seligman's. However, Seligman's model appears to lack the flexibility needed to account for depressive states in which the individual is evidently too ready to burden himself with the responsibility for outcomes of the events of his life. Indeed, it seems likely that there are depressed persons, perhaps those whose depressive episodes are characterized more by guilt and intrapunitiveness than by passivity, who would show no manifestation of helplessness. The fact that some factor analyses of depressive symptomatology (Blatt, D'Affliti & Quinlan, 1976; Kerry & Orme, 1975) have yielded separate factors for guilt or self-criticism and lack of motivation and confidence lends credence to this possibility.

Although no study has addressed this issue directly, several sources of evidence suggest that some or all depressive states do have a self-blaming characteristic that Seligman's model does not explain.

Calhoun et al. (1974) have found that depressed women are more likely than others to attribute their own periods of depression to causes within their personal control. Klein et al. (1976) found that depressed subjects are more likely than controls to attribute failures to internal factors (although not successes).

In these studies, depressed individuals appear, in circumscribed areas, to be characterized by a great sense of responsibility and control regarding the outcomes of events in which they are involved, which is opposite of what the learned helplessness notion would predict.

Finally, in a study that raises more questions than answers, Ducette, Wolk, and Soucar (1972) found that children with psychological problems (affect not assessed) are characterized not by a nonspecific sense of lack of control but by either a sense of lack of control over either positive or negative outcomes or by a sense of control over positive outcomes, but not over negative ones. These studies (Blatt, D'Affliti & Quinlan, 1976; Calhoun et al. 1974; DuCette, Wolk & Soucar, 1972; Kerry & Orme, 1975; Klein et al. 1976) indicate that the domain of depression-related cognitions regarding control is probably more complex and differentiated than is captured by an unidimensional control versus noncontrol approach.

<u>Hopelessness</u>. Beck's and Seligman's theories may also appear to diverge with respect to cognitions of pessimism and hopelessness. Data indicating that depressed persons tend to be hopeless (Erickson, Post & Paige, 1975; Gottschalk, 1974; Minkoff, Bergman, Beck & Beck, 1973) are clearly consistent with Beck's theory (a "negative view of the future"). These findings may appear not be predicted by the helplessness model, which does not claim that the depressed person expects the worst to happen, but only that he believes he has no control over what does happen. However, it is probable that a person who considers himself in control would also expect that he could maximize positive and minimize negative outcomes more than the helpless individual.

Seligman's model can easily be made to account for the data

indicating a link between hopelessness and depression. However, a similar conclusion cannot be attributed to Beck's model (Blaney, 1977).

<u>Helplessness</u>. With regard to whether helplessness can cause depressed cognitions, Prociuk, et al. (1976), Klein and Seligman (1976) indicate that helplessness inductions may well result in two cognitive manifestations of depression-perception of noncontrol and low self-esteem. It has not been ascertained, however, if this is also the case for other cognitive manifestations, e.g., self-blame.

With regard to whether cognitive-depression inductions can result in the behavioral manifestation of helplessness, there are two studies that are relevant. Batsel (1976) and Coleman (1975), both assessed the performance of subjects on anagrams in whom their affective level had been manipulated cognitively. In neither case did affect-manipulation subjects differ from controls, which suggests that at least in the context of such studies, the broader cognitive model of depression may not be able to account for the behavioral manifestations of depression on which Seligman's model has focused.

In summary, it appears that there is considerable overlap between the two theoretical positions which emphasize the importance of perception (espoused by Beck and Seligman), and control (espoused by Seligman) in depression. The unique contribution of Beck's theory lies in his focus on particular cognitions not addressed by Seligman. The unique contribution of Seligman's theory lies in the experimental procedures suggested by it. In Beck's theory, a lack

of control would be depressing to the extent that it is perceived to be a lack and consequently judged unacceptable. The apparent affinity between the Beck and Seligman models is a function of Seligman's emphasis on the importance of the perception of control.

Contemporary theories of depression such as those of Beck (1967, 1976), Seligman (1975), and Abramson, Seligman and Teasdale (1978), have emphasized depression as a response to interpretations of negative life events. These researchers and their colleagues share the view that idiosyncratic interpretations of the causes of negative events that emphasize or exaggerate self-blame and hopelessness may lead to depressive reactions.

Locus Of Control

In considering the assessment of life change and its effect on individuals, it would seem necessary to take into account the role of locus of control in addition to life stress because it has been shown that various individuals evidence apparently idiosyncratic, unpredictable responses to similar stresses. The present study hypothesizes that locus of control, in fact, operates as a móderator to influence response to life stresses and therefore also influences susceptibility to depression.

The term "locus of control" refers to a construct that originated from within Rotter's social learning theory (Rotter, Chance & Phares, 1972). Locus of control, in social learning terminology, is defined as a generalized expectancy pertaining to

the connection between personal characteristics and/or actions and experienced outcomes (Lefcourt, 1981, p. 246).

Locus of control develops as an abstraction from a number of specific encounters in which persons perceive the causal sequences occurring in their lives. For some individuals, many outcomes are experienced as being dependent upon the effort expended in their acquisition. Such persons may come to believe that outcomes are generally contingent upon the amount of work necessary to achieve a goal so that they are more apt to exert themselves when engaged in important tasks. Other individuals fail to perceive the connection between efforts and outcomes. In societies where nepotism, graft, and other iniquitous procedures may dominate the economic scene, success may be perceived as being more a function of luck or "being related to the right people" than it is of effort or ability. Consequently, more time may be expended in prayer, gambling, or a search for succor in instrumental acts that could help to create the desired ends.

Locus of control, like helplessness, involves the beliefs that individuals hold regarding the relationships between actions and outcomes. Whereas Seligman (1975) describes helplessness in terms of response-outcome independence, a generalized expectation of external control is defined as a pervasive belief that outcomes are not determinable by one's personal efforts. The converse, an internal locus of control, is the belief that outcomes are contingent upon actions. In social learning theory, it is possible to describe individuals as holding expectations that are more

"external" or "internal" with regard to causation and thus to control.

Since the early introduction of the locus of control construct (Rotter, Seeman & Liverant, 1962) and the Internal-External Control of Reinforcement Scale I-E (Rotter, 1966), there have been innumerable studies reported that have served to demonstrate the construct validity of locus of control as a personality variable. Recently Lefcourt (1976) and Phares (1976) have attempted to summarize this burgeoning literature.

In general, persons who have described themselves as holding generalized expectancies of external control appear to behave in ways that are congruent with descriptions of helplessness. They are less likely to be active in the pursuit of information related to the state of their own well-being, are less likely to use information if it is available, and less likely to express those positive affects that are associated with the state of well-being than those who are more internally motivated. As expressed by Lefcourt (1976):

"Where fatalism or external control beliefs are associated with apathy and withdrawal, the holding of internal control expectancies presages a connection between an individual's desires and his subsequent actions. As such, locus of control can be viewed as a mediator of involved commitment in life pursuits. If one feels helpless to effect important events, then resignation or at least benign difference should become evident with fewer signs of concern, involvement and vitality" (p. 152).

Locus of Control and Stressful Life Events

Since Holmes and Rahe (1967) introduced their Life Events

Survey, a rather extensive literature has developed that is concerned with the impact of life events on the individuals who suffer them. The life events that are assessed by this and other scales are a kind that necessitate changes in an individual's relationships with valued persons and objects.

Holmes and Rahe (1967), and many other investigators (Dekker & Webb, 1974; Paykel et al. 1969; Vinokur & Selzer, 1975), found that those persons who have experienced many life changes in relatively short time-spans become more susceptible to a variety of emotional and physical disturbances.

Despite the accumulated information attesting to the effects of life events as determinants of illnesses, there has always been enough variance among the persons suffering similar life changes to raise questions concerning the ubiquity of the impact of life events.

As Sarason and Johnson (1978) have observed, life changes alone rarely account for more that ten percent of the variance in the prediction of sequelae to stressors. Both Johnson and Sarason (1978) and Rabkin and Struening (1976) contended that predictive accuracy could be enhanced by the identification and measurement of variables that can moderate the deleterious effects of stressful life events.

Among the potential moderators of stress, the perception of control has received a good share of research attention. Recently, Cohen (1980) extensively reviewed the literature concerning experimental studies of stress effects on task performances and

social behavior. Cohen (1980) found ample evidence to suggest that increased control over a stressor decreases the deficits in post-stimulation performance. The findings seemed to be so consistent and pervasive that Cohen was led to wonder if perceived control may be associated with better performance in general, rather than merely in response to stress.

A number of investigators (Cronbach & Snow, 1977; Pervin & Lewis, 1978; Corno, 1979) have provided supporting data while making use of different methodologies. These investigators have made use of different life-event scales in order to use life stress events as measures of individual differences.

Some investigators simply asked their subjects if the life events experienced were controllable, aversive, or anticipated. They then attempted to predict respondents' emotional reactions to those events. Dohrenwend and Martin (1979) and Fontana, Hughes, Marcus and Dowds (1979) found that normative judgements of desirability and controlability better predict adjustment than do personal assessments.

Other researchers, such as Husaini and Neff (1980), McFarlane, Norma, Streiner, Roy and Scott (1980), Suls and Mullin (1981), found that individually assessed judgements of the controlability of events are predictive of psychiatric symptomatology and subjective strain. Husaini and Neff (1980) reported that in addition to the total number of life events, ratings of the undesirability and lack of preventability of those events helped to predict depression or a sense of general well-being. The greater the reported number of

undesirable and unpreventable events relative to the total number of life events, the higher were the individual's levels of psychiatric symptomatology.

McFarlane et al. (1980) similarly found ratings of controllability to be a major factor in the predictions of a scale of subjective strain. Undesirable events over which subjects claimed to have total control did not correlate with strain. When the events were rated as the subjects having only some control, the correlation between those events and strain ranged between .09 and .35, the latter being significant at the .001 level. When the events were rated as uncontrollable, the correlations ranged between .28 and .40, which are all significant at the .001 level. The large sample size (n=500) may have contributed to the significance of these findings.

Similarly, Suls and Mullin (1981) found significant correlations between life changes and illness when the events were perceived either as undesirable or uncontrollable. In a second investigation by these authors in which illness was predicted in a prospective design, only undesirable and uncontrollable life events were found to be related to subsequent symptoms of distress.

The importance of the locus of control variable has been suggested by the results of a study conducted by Johnson and Sarason (1978) in which the relationships among life change and measures of anxiety and depression were examined as a function of locus of control orientation. It was predicted that a relationship between negative change, depression and anxiety would be found for

externally oriented subjects (who presumably see themselves as having little control over environmental events). The results were consistent with this prediction, suggesting that life stress may effect individuals differently depending on the degree of their perceived control over events.

Similar evidence for the moderator effect of locus of control has been reported by researchers at the University of Chicago (Kobasa, 1979, 1982; Kobasa, Maddi & Puccetti, 1982). These investigators examined what they refer to as "hardiness". The capacity to resist illness (psychiatric symptomatology) despite stress. In these studies, Kobasa and her colleagues attempted to define the characteristics that differentiate people who evidence psychiatric symptomatology following life stresses from those who are better able to resist becoming ill. It has been found that some individuals' peculiar idiosyncratic make-up predisposes them to be more vulnerable to illness. Using a variation of the Holmes and Rahe (1967) measure of stressful life events, Kobasa (1979) found that high/stress-low/illness business executives rated themselves as less stressed than did high/stress-high/illness executives.

In several other studies, Kobasa and her colleagues relied on the composite hardiness index in their exploration of the modifiers of stress. In one of these studies (Kobasa et al. 1981), hardiness along with constitutional predisposition and stressful life events, were found to produce significant main effects in the prediction of illness. The latter two variables served to increase illness, whereas hardiness was found to decrease it. However, no

interactions were found suggesting that these variables had an additive rather than an interactive (moderating) effect. Though much of Kobasa's results derive from her use of the hardiness composite index, the "perception of control" variable has been found to play a significant role in each instance where the composite index has been disaggregated or partialled out.

Another set of studies is distinguished by the assessment of life events used in conjunction with independent measurement of locus of control. The earliest reported studies in which life events and locus of control were used conjointly in the prediction of adjustment measures were those of Manuck, Hinrichsen and Ross (1975). Manuck and his co-workers found that all subjects who reported a high number of life changes also scored high on state and trait anxiety measures. However, among those who acknowledged having few life changes, "externals" reported much higher state anxiety than did their "internal" counterparts. In essence, "externals" reported feelings more anxious than did "internals" in the absence of stressful life events. Given a high incidence of stressors, on the other hand, locus of control ceased to be a predictor of anxiety. These findings were reflected in a study by these authors with patients seeking help for physical complaints as the criterion variable. Again, "internals" who acknowledged having experienced highly stressful life events were equivalent to "externals" in their attempt to seek help for their difficulties. Among the low stress groups, however, "externals" sought help more often than did "internals".

Further complexity in research concerned with the role of locus of control as a moderator of stress has emerged from the work of Sandler and his colleagues. In a recent study, Sandler and Lakey (1982) discussed the higher-order interactive effects between locus of control and social support as moderators of stress. Using a life events measure designed specifically for university students, these investigators predicted the relationships between negative life events and trait anxiety and depression with locus of control and social support, i.e., emotional support, guidance, assistance with tasks or physical supplies as moderator variables. For "internals", the correlations between negative life events and depression and anxiety were of lesser magnitude than were those for "externals". Most important, in a multiple regression analysis, significant interactions were found between negative life events and social support among "internals". "Externals", on the other hand, produced interactions which did not achieve significance. "Internals" who enjoyed high social support showed fewer correlations between negative life events and depression and anxiety than did "internals" without social support. For "externals" who generally had higher social support scores, there was no ostensible interaction, suggesting that social support did not have a moderating effect for that group. It seems that "externals" do not use their social contacts effectively to diminish the impact of stressors, whereas "internals" are better able to do so even when those contacts are less pervasive and frequent.

Based on the results of these investigations it appears, with

The Life Experiences Survey (LES) is a 57-item, self-report 2. measure that allows respondents to indicate the events that they have experienced during the past six months (Sarason, Johnson & Siegel, 1978). The scale has two parts: Section 1, designed for all respondents contains a list of 47 specific events plus three blank spaces in which subjects can indicate other events that they may have experienced. The events listed in Section 1 refer to life changes that are common to individuals in a wide variety of situations. The 10 events listed in Section 2 are designed primarily for use with a student population and deals specifically with changes experienced in the academic environment. For the purpose of this study, only Section 1 was used because it was considered appropriate for use with subjects drawn from the general population.

The LES items were chosen to represent life changes commonly experienced by individuals. Many items are based on existing life stress measures, particularly the Schedule of Recent Experiences (SRE; Holmes & Rahe, 1967). Other items were included because they were judged to be events that occur frequently and that potentially might exert a significant impact on the lives of persons experiencing them (Sarason, Johnson, & Siegel, 1978).

According to Sarason, Johnson and Siegel (1978) the LES adequately samples the domain of information that the survey purported to measure. The only measure of the survey's

usefulness was obtained through its content validity. The format of the LES calls for subjects to rate separately the desirability and impact of events that they have experienced. They were asked to indicate those events experienced during the past six months, and whether they viewed the events as being positive or negative. Ratings are made on a 7-point scale ranging from extremely negative (-3) to extremely positive (+3). Summing the impact ratings of those events designated as positive by the subject provides a "Positive Change Score". A "Negative Change Score" is derived by summing the impact ratings of those events experienced as negative by the subject. By adding these two values, a "Total Change Score" can be obtained, representing the total amount of rated change (desirable and undesirable) experienced by the subject during the past six months.

Since, in this study, only the negative events are being investigated, only the "Negative Change Scores" will be used. Test-retest reliability studies of the LES have been conducted. The reliability coefficients for the "Negative Changes Score" were found to range from .56 (p .001) and .88 (p .001) (Sarason, Johnson, & Siegel, 1978).

Correlates of the LES

If LES measures life stress, its scores should correlate with relevant personality indices (Sarason, Johnson, & Siegel, 1978). To investigate this relationship, a group of students

(N = 100) were administered the LES, the State Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970), and a short form of the Marlowe-Crowne Social Desirability Scale (Strahan & Gerbasi, 1972).

Inspection of the correlations obtained showed that the "Total Change Scores" and the "Negative Change Scores" correlate significantly and in a positive direction with the state and trait anxiety measures, whereas the "Positive Change Scores" are not significantly related to either measure. Tests for significance of the difference between correlations suggested that "Positive" and "Negative Change Scores" differ significantly in their correlations with state anxiety (p .01).

The relationships between life change scores and the social desirability measure were found to be nonsignificant. Correlations between "Positive", "Negative", and "Total Change Scores" and social desirability were -.05, .05, and .01, respectively. This suggests that responses to the LES were relatively free from the influence of a social desirability response bias (Sarason, Johnson, & Siegel, 1978).

3. The <u>Levenson's Multidimensional Locus of Control Scale</u> (LMLCS) (I, P, and C Scales). Levenson's (1972) multidimensional locus of control scale was originally designed as a reconceptualization of Rotter's unidimensional I-E Scale by converting this instrument into

the exception of the studies by Manuck et al. (1975), that locus of control has been found to act as a determinant or a moderator of stress-illness relationships.

Limits of Locus of Control as a Predictive Construct

It has been suggested that investigators using the locus of control construct in stress research need to take its limitations into account (Haan, 1982).

People cannot realistically attribute responsibility to themselves for many stressful life events, although they may habitually think that they determine their own fate. In fact, an almost invariant property of a stressful situation is that people are not able to control its onset and outcome. Dohrenwend (1973) illustrated this point well when she showed that women and blacks experience more stressful life events than do white males, an understandable finding in view of their lower status. Women and blacks are also known to have lower internal control scores than do white males.

This limitation i.e., separating specific reactions to stress from habitual expectations, may not always be an important drawback if assessment is done before or after stress or even during mild stress that does not color all the interpretations that persons make of themselves and their lives. This methodological problem accompanies any measurement made outside the stressful situation (Haan, 1982). In addition to this complication, there has been some disagreement about the ways in which locus of control relates to responses made in failure situations. Phares (1976) has contended that "internals" have greater difficulty in assimilating negative feedback, whereas Lefcourt (1976) has argued the reverse -- that "internals" are less inclined to draw generalization about their inabilities than "externals" and, consequently, should be better able to accept specific instances of failure.

Another complication in the locus of control literature derives from the almost inevitable value judgements attached to either end of the continuum -- "internality" being adjudged good, "externality" bad. According to Lefcourt (1980) internal control expectancies about many aspects of our lives would be foolish and possible precursors of negative fates. The person who refuses to be led, helped, or consoled because he or she perceives himself/herself as the only agent capable of handling crises such as cardiac arrest may find himself/herself disadvantaged, or even dead, because of this failure to allow others a part in aiding in his or her survival. As Gurin et al. (1969) has noted, internal control expectancies among those who are obstructed by external constraints may be self-destructive.

Finally, there is a problem of overgeneralization. Scales such as Rotter's assess "generalized expectancies" in the sense that they do not focus on single goals or outcomes. However, most scales are far from exhaustive in sampling the range of possible reinforcements and experiences. Because of the shortcomings of many assessment

devices, some investigators have created scales that adequately sample particular attributes. Levenson (1972), for example, has created separate scales for assessing beliefs about internal control, powerful other, and chance as causal agents.

In conclusion, given the complications involving locus of control research, it seems that locus of control, like other personality variables, can allow for useful predictions in particular circumstances, but it is more likely to fall short if used indiscriminately.

In summary, the preceding literature review presented information/studies relevant to stressful life events, depression and locus of control. The present study will attempt to investigate the relationship between stressful negative life events and depression (i.e., Adjustment Disorder with Depressed Mood) and whether locus of control operates as a moderator between depression and stressful life events. In order to investigate this relationship measures will be drawn from Sarason, Johnson and Siegel (1978) - Life Experiences Survey, Beck, et al. (1974) - Beck Depression Inventory and Levenson (1972) - Levenson's Multidimensional Locus of Control (Internal Scale, Powerful Others Scale, Chance Scale).

CHAPTER THREE METHODOLOGY

This chapter's purpose is to provide a summary statement of the problem being investigated and to delineate the methodology employed in the research. Accordingly, the initial section describes the aim of the research and a statement of the problem. The next section provides the definition of terms used in the study. The following sections describe, in detail, the subject selection, the test instruments utilized, and the procedures of data collection and data analysis. In the final section the experimental hypotheses are formulated and specified.

Aim of the Study and Statement of the Problem

It has been demonstrated that there is a strong relationship between one's experience of stressful, negative life events and various age categories (Chiriboga & Cutler, 1977). However, the findings reported are controversial. For example, Holmes and Masuda (1974), Dekker and Webb (1974), and Uhlenhuth, et al. (1974) contend that younger people experience more stressful, negative life events than older people. In contrast, Langner and Michael (1974) found an opposite relationship, suggesting that stresses accumulate with advancing age. One of the major purposes of the present study is to derive a better understanding of the above mentioned relationships involving age and negative life events.

Sarason, Johnson and Siegel (1978) reported that stressful, negative life events are significantly related to depression and its severity, which helps to confirm the findings of Vinokur and Selzer (1975) who also claim that there is a significant relationship between negative life changes and measures of depression.

A number of studies report a relationship between stressful, negative life events, locus of control, and depression. Sarason, Johnson and Siegel (1978) indicated that individuals who report having experienced high levels of stressful, negative life events, but feel they have no control over events, are most susceptible to the effects of life stress. Such individuals perceive themselves as less able to control their environment. More recently, Baltes and Baltes (1986) concluded that advanced age is significantly associated with locus of control as they found that older individuals have less control over events than younger individuals. These authors concluded that, due to the lack of control over the stressful, negative events, older people are more susceptible to depression than younger people.

As indicated above several authors have focused their research on determining the relationship between stressful negative life events and locus of control. One of the major practical implications for studying the above relationships concerns the method of treatment. According to Knight (1978, 1979), treatment modalities are often different for various age categories. Unfortunately, the findings regarding this issue are equivocal (Gomes-Schwartz, Hadley, & Strupp, 1978). It is the aim of the

present study to examine whether age is significantly related to depression, stressful negative life events and locus of control.

The following research questions will be studied:

- Is there a significant difference for the main effects of age (younger vs. older) and gender (males vs. females), respectively, on depression ?
- 2) Is there a significant correlation between the number of negative life events and depression ?
- 3) Is there a significant correlation between the severity of negative life events and depression?
- 4) Do depressed individuals perceive themsevles as having less control over environmental events?

Definitions

Negative Life Event

The term "negative life event" refers to those events that require some degree of negative change or alteration in the person's life situation (Sarason, Johnson & Siegel, 1978, p. 935).

Depression

The clinical entity referred to as "depression" in the present study is taken from the Adjustment Disorder with Depressed Mood (formerly referred to as reactive depression) category in the Diagnostic and Statistical Manual of Mental Disorders (DSM III, 1980).

Adjustment Disorders are defined as "a maladaptive reaction to an identifiable psychosocial stressor that occurs within three months after the onset of the stressor" (DSM III, 1980, p. 299). The study specifically utilized subjects diagnosed as Adjustment Disorder with Depressed Mood, which is one type of Adjustment Disorder. The DSM III definition of Adjustment Disorder with Depressed Mood is as follows: "This category should be used when the predominant manifestation involves such symptoms as depressed mood, tearfulness, and hopelessness. The major differential is with Major Depression and Uncomplicated Bereavement". (DSM III, 1980, p. 301).

A general definition of Adjustment Disorder as provided by DSM III includes the following criteria:

- A. "A maladaptrive reaction to an identifiable psychosocial stressor that occurs within 3 months of the onset of the stressor.
- B. The maladaptive nature of the reaction is indicated by either of the following:
 - (1) Impairment in social or occupational functioning;
 - (2) Symptoms that are in excess of a normal and expectable reaction to the stressor.
- C. The disturbance is not merely one instance of a pattern of over-reaction to stress or an exacerbation of one of the mental disorders previously described.

- D. It is assumed that the disturbance will eventually remit after the stressor ceases or, if the stressor persists, when a new level of adaptation is achieved.
- E. The disturbance does not meet the criteria for any of the specific disorders listed previously or for Uncomplicated Bereavement". (DSM III, 1980, p. 300-301).

Locus of Control

The term "locus of control" refers to a construct that originated from within Rotter's social learning theory (Rotter, Chance & Phares, 1972). Locus of control, in social learning terminology, is defined as "a generalized expectancy pertaining to the connection between personal characteristics and/or actions and experienced outcomes" (Lefcourt, 1980, p. 246).

Rotter divided the perception of exercising control upon the environment into two categories: (a) "external control" which applies when a reinforcement is perceived by the subject as following some action of his own, but not being entirely contingent upon his action; (b) "internal control" which occurs when the event is contingent upon his own behavior (Rotter, 1966, p. 1). In this study, Levenson's (1972) multidimensional conceptualization of locus of control is used. (See page 64).

Subjects

Forty-eight subjects (twenty-four males and twenty-four females) who met the criteria for the research and were requesting help from Calgary Northeast and Strathmore Alberta Mental Health Clinics were selected for the study over a 16 month period. The sample selected consisted of:

- a) Individuals diagnosed as experiencing "Adjustment Disorder with Depressed Mood". This diagnosis was established by a mental health therapist (nurse, psychologist or social worker) according to the DSM III (1980) criteria.
- b) Subjects were further selected on the basis of age with one group ranging from 20-35 years in age (younger), the other from 40-65 years in age (older), (see p. 54), and also subdivided according to their gender (males and females).

Alberta Mental Health Services provides assessment and active treatement including counselling of moderate to severe (high risk) mental health problems at all ages, which can be delivered on an outpatient, voluntary basis. Referrals are accepted from physicians, other treatment agencies or self-referral.

Research Instruments

For the purpose of this study, three instruments were employed:
the Beck Depression Inventory (1974), the Life Experiences Survey (1978), and the Levenson's Multidimensional Locus of Control Scale (1972). These instruments were selected for the following reasons.

The Beck Depression Inventory was selected because this inventory was the most commonly used by the therapists in the Clinic, and evaluates well a wide variety of symptoms and attitudes associated with depression. In addition, it has been shown that the BDI is sensitive to stressful life events in both the inpatient and outpatient populations (Nielsen & Williams, 1980).

The Life Experiences Survey was chosen as the format of the survey calls for subjects to rate separately the desirability and impact of events that they have experienced.

The Levenson's Multidimensional Locus of Control Scale was selected because the multidimensional conceptualization of the locus of control construct offers more complex and congruous perspective than the unidimensional approach as it differentiates between two types of external orientation.

1. The <u>Beck Depression Inventory</u> (BDI) is a 21-item test presented in a multiple-choice format which purports to measure presence and degree of depression in adolescents and adults. The original BDI was published in 1961 (Beck, et al. 1961). A revision (Beck 1974) was undertaken standardizing each item to have four possible choices. A weighting of zero, one, two, or three points is assigned to each choice. The BDI items correspond to a specific category (Beck, 1974) of

depressive symptomatology and/or attitude. Each category also purports to describe a specific behavioral manifestation of depression and consists of a graded series of four self-evaluative statements. The statements are rank ordered, and weighted to reflect the range of severity of the symptoms from neutral to maximum severity. Numerical values of zero, one, two, or three are assigned to each statement to indicate the degree of severity.

Subjects are asked to read each group of statements carefully and then select the statement from each group that best describes what they have been feeling over the past week including the day of administration. If several statements in the group seemed to apply equally well, the subjects are asked to circle each statement they believe best describes how they felt.

The score is obtained by taking the highest score for each item and adding the cumulative number of points for all items. The content validity of the BDI was established on a group of experts (psychiatrists), and was acceptable because the BDI appeared to evaluate well a wide variety of symptoms and attitudes associated with depression (Bumberry, Oliver, & McClure, 1978).

The internal reliability of the BDI, as measured by split-half correlations, was found to be .86, and the test-retest reliability, as measured by the Spearman-Brown correlation was found to be .93 (Beck, 1970).

three dimensions of expectancy: Internal (I Scale), Powerful Others (P Scale), and Chance (C Scale).

The I Scale measures the extent to which people believe that they have control over their own lives (e.g., "When I make plans, I am almost certain to make them work."); the P Scale deals with powerful others (e.g., "In order to have my plans work, I make sure that they fit in with the desires of people who have power over me."); and the C Scale is concerned with perceptions of chance control (e.g., "It's not wise for me to plan too far ahead because many things turn out to be a matter of good or bad luck.") (Levenson, 1981, p. 17). The I. P and C Scales are a set of statements written specifically to tap beliefs about the operation of the three dimensions of control - beliefs in personal control (Internal Scale), powerful others (Powerful Others Scale), and chance or fate (Chance Scale). The I, P, and C Scales comprise three 8-item subscales with a 7-point Likert format (0-6) which are presented to the subject as a unified scale of 24 items. The internal reliability coefficients as measured by the Kuder-Richardson formula are: .67 for the Internal Scale; .82 for the Powerful Others Scale; and .79 for the Chance Scale (Levenson, 1972).

The validity of the I, P, and C Scales has been demonstrated in college sample where Rotter's I-E scale was shown to correlate positively with both the P and C Scales and negatively with the I scale (Levenson, 1972). In this study, all three subscales

of Levenson's Multidimensional Locus of Control (Internal Scale, Powerful Others Scale, Chance Scale) were used.

Procedure

Individuals requesting help through the Calgary Northeast Alberta Mental Health Clinic were assigned to a primary therapist (nurse, psychologist, or social worker) at an Intake Conference conducted by the Intake Worker, the Clinic Manager and a Consulting Psychiatrist. The Initial Assessments were conducted by a primary therapist (nurse, psychologist, or social worker) and a provisional diagnosis based on the DSM III was formulated. When a diagnosis of "Adjustment Disorder with Depressed Mood" was made, the client was asked by the primary therapist (nurse, psychologist or social worker) if he/she was willing to participate in a research study. If he/she was agreeable, an appointment within one week of the Initial Assessment was arranged with the researcher.

The researcher interviewed each potential subject to discuss the purpose of the study, and to obtain written informed consent. The consent included information about the study and ensured the participant anonymity and confidentiality (see Appendix A). The voluntary nature of participation was also carefully explained, and each client was assured that he/she could withdraw at any time without penalty.

Each subject was seen individually by the researcher on only one occasion in order to obtain the following: consent for

participation, demographic information (gender, age, education, marital status), and to administer the three questionnaires (BDI, LES, LMLC). Each interview and assessment period required approximately 45 - 55 minutes to complete. All subjects, without exception, completed the entire assessment procedure.

Once the interview had been completed and rapport had been established, the three questionnaires were administered in the following order for each subject: Beck Depression Inventory (BDI), Life Experience Survey (LES), and the Levenson's Multidimensional Locus of Control Scale (I,P,C Scales). This order was chosen to control for a possible interaction effect of the Life Experience Survey on the Beck Depression Inventory to help minimize a negative response set. It was believed that if the subject was exposed first to the items included in the Life Experiences Survey (i.e., "death of a close family member" or "foreclosure on mortgage or loan" or "being fired from job") he/she could possibly develop a negative response set which could influence his/her answers on the Beck Depression Inventory. This order of administration was maintained throughout the investigation.

A psychologist from the Clinic volunteered to perform the scoring of the LES, BDI and Levenson's Multidimensional Locus of Control (I.P.C.) Scales.

Subject selection took place over a 16 month period commencing on May 1, 1986 and was completed on August 31, 1987.

Description of Setting

All subjects were interviewed in the Calgary Northeast Alberta Mental Health Clinic. The interviews were conducted in a quiet room which was furnished with a standard desk, three armchairs, and a coffee table. No outside disturbance impinged upon the confines of the quiet room. The client was seated at the desk facing a blank wall. The researcher was seated at the end of the desk at right angles to the client.

Data Analyses

In order to evaluate the effect of negative life events, their severity and the locus of control, upon the degree of depression of two outpatient groups (younger and older), descriptive statistics (mean, median, standard deviation) were used to describe each variable. The age categories (older vs. younger) were further subdivided by gender (males vs. females), and were compared on the Beck Depression Inventory Scores to determine if an expected difference exists using a two-way Analysis of Variance to test the main effects for group (older vs. younger), and gender (male vs. female). The interactions (gender by age) were also tested. The ANOVA program from the Statistical Package for Social Sciences (SPSS) was used to analyze the data.

An Analysis of Variance was used because the independent variables were categorical (age: older, younger; sex: male, female)

and the dependent measure was continuous (by the central limit theorm if the number of choices is greater than 30 then the data can be considered continuous and normal). The assumption of homogenity of variance was made for the depression scale by performing F-tests (F = largest variance devided by the smaller variance).

A Pearson Product Moment correlation coefficient was used because the variables were continuous (number of negative life events and their severity, the degree of depression and the three scales of locus of control: Internal, Powerful Others and Chance Scale), and the data was assumed to be normally distributed.

Levels of significance were set at p .05.

The Pearson Product Moment coefficient was used and the data was assumed to be normally distributed.

Hypotheses

A total number of eight experimental hypotheses expressed in the null form, were postulated for the current study. The null hypothesis asserts that the population mean difference between two groups, is zero. The null hypothesis was not accepted, if the statistical evidence suggested that significant differences were obtained between the two groups, i.e., population differences should be greater than zero (Ferguson, 1981). A significance level of .05 was selected to determine whether a statistically significant difference existed between the two groups.

The null hypotheses are stated as follows:

- No statistically significant difference will be found between age (younger vs. older) and the subjects' Depression Scores (as measured by the BDI).
- No statistically significant difference will be found between gender (males vs. females) and the subjects' Depression Scores (as measured by the BDI).
- 3. No statistically significant interaction will be found between age (younger vs. older) and gender (males vs. females) on the subjects' Depression Scores (as measured by the BDI).
- 4. No statistically significant correlation will be found between the number of Negative Life Events Scores (as measured by the LES) and the subjects' Depression Scores (as measured by the BDI).
- 5. No statistically significant correlation will be found between the severity of Negative Life Events Scores (as measured by the LES) and the subjects' Depression Scores (as measured by the BDI).
- 6. No statistically significant correlation will be found

between the locus of control Internal Scale Scores (as measured by the Levenson's Multidimensional Locus of Control Internal Scale) and the subjects' Depression Scores (as measured by the BDI).

- 7. No statistically significant correlation will be found between the locus of control Powerful Others Scale Scores (as measured by the Levenson's Multidimensional Locus of Control Powerful Others Scale) and the subjects' Depression Scores (as measured by the BDI).
- 8. No statistically significant correlation will be found between the locus of control Chance Scale Scores (as measured by the Levenson's Multidimensional Locus of Control Chance Scale) and the subjects' Depression Scores (as measured by the BDI).

CHAPTER FOUR

RESULTS

The purpose of this chapter is to present and analyze the data resulting from the investigation. The results of this research will be presented in two sections. The first section will include data associated with demographic variables which include age, gender, education and marital status. Descriptive statistics (mean, median, standard deviation) were employed to describe the sample population and the variables (number of negative life events and their severity, the degree of depression and locus of control). The second section (Hypothesis Testing), will present the specific findings of the study as they pertain to the eight null hypotheses formulated. These hypotheses were either accepted or rejected based on a two-way Analysis of Variance or the Pearson Product Moment correlation coefficient.

Sociodemographic Variables

Subjects were selected on the basis of age with one group ranging from 20-35 years in age (younger), the other from 40-65 years of age (older), and also subdivided according to gender (male and female). Each group contained 12 males and 12 females for a total of 24 subjects in the younger group and 24 subjects in the older group.

Table 1 presents the descriptive statistics (mean, median, standard deviation) for the two age groups (20-35 and 40-65

respectively) and the gender variable (see Table 1).

Subjects were further divided according to education. The number of subjects having completed grades 1-9 was 0% male and 2% female for the "younger group"; and 2% male and 4% female for the "older group". Subjects who had completed grades 10-12 were 15% male and 17% female for the "younger group"; and 13% male and 13% female for the "older group". Those subjects who had completed a post-secondary education numbered 10% male and 4% female for the "younger group"; and 8% male and 6% female for the "older group". Lastly, those subjects who had a university education were 0% male and 2% female for the "younger group"; and 2% male and 2% female for the "older group". (See Table 2).

The subjects' marital status was also tabulated. The number of subjects who were separated were 10% male and 10% female for the "younger group"; and 15% male and 2% female in the "older group". The married subjects were 4% male and 4% female in the "younger group"; and 4% male and 10% female in the "older group". Subjects living common-law were 0% male and 8% female in the "younger group"; and 0% male and 0% female in the "older group". The number of divorced clients were 0% males and 0% female for the "younger group"; and 2% male and 10% female for the "older group". The subjects who were never married were 10% male and 0% female in the 20-35 age group; and 0% male and 0% female in the 40-65 age group. Lastly, the widowed subjects were 0% male and 2% female in the "older group". (See Table 3).

Age and Gender-Descriptive Statistics for the Groups

		Males	Females							
20-35 age	Mean=30.17	Std. Dev.= 4.47	N=12	Mean=28.08	Std. Dev.= 3.45 N=1					
40-65 age	Mean=50.0	Std. Dev.= 7.53	N=12	Mean=45.33	Std. Dev.= 6.09 N=1					
Total:	Mean=40.08	Std. Dev.=11.80	N=24	Mean=36.71	Std. Dev.=10.05 N=2					
For younge overall (m	r Group ales and emales)	Mean=29.12		Std. Dev.= 4.02						
For older overall (m f	Group males and Temales)	Mean=47.67		Std. Dev.= 7.11						
Overall:		Mean=38.396		Std. Dev.=10.975	N=48					

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	, To f	otal %	Yo Ma f	unger le %	Gro Fem f	oup nale %	To f	otal %	0 Ma f	lder le %	Grou Fer f	ıp nale %	0ve f	ra11 %
, Cuada 1 0	1	24	0	0%	1	2%	3	6%	1	2%	2	4%	4	8%
Grade 10 - 12	15	32%	7	15%	8	17%	12	26%	6	13%	6	13%	27	58%
Post Secondary	7	14%	5	10%	2	4%	7	14%	4	8%	3	6%	14	28%
University	1	2%	0	0%	1	2%	2	4%	1	2%	1	2%	3	4%
						•								

Education - Frequencies and Percentages for the Groups

Marital S	Status -	Frequencies	and	Percentages	for	the	Groups
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	· To f	tal %	ر	Y Ma f	ounge le %	r Gr Fe f	oup male %	Tc f	tal %	(Ma f)lder ale %	Gr Fe f	oup male %	0ve f	rall %
Married	4	8%	<u> </u>	2	4%	2	4%	7	14%	2	4%	5	10%	11	23%
Separated	10	22%		5	10%	5	10%	8	17%	7	14%	1	2%	18	38%
Common-Law	4	8%		0	0%	4	8%	0	0%	0	0%	0	0%	4	8%
Divorced	0	0%		0	0%	0	0%	6	13%	1	2%	5	10%	6.	13%
Never Married	5	10%		5	10%	0	0%	0	0%	0	0%	0	0%	5	10%
Widowed	1	2%		0	0%	1	2%	3	6%	2	4%	1	2%.	4	8%
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Table 4 presents the descriptive statistics of the younger and older groups for the variables: number of negative life events and their severity (as measured by the LES), degree of depression (as measured by the BDI) and the locus of control (as measured by the Levenson's Multidimensional Locus of Control Internal Scale, Powerful Others Scale and Chance Scale).

The detailed findings associated with these variables are discussed under the section entitled "Hypothesis Testing" in order to avoid redundancy.

Statistical Findings for the Age (Younger/Older) Groups on the Life Experiences Survey

Chi Square was used in the analysis of frequencies to ascertain whether there were any significant differences between groups (younger/older) on the Life Experiences Survey.

Every question contained in the Life Experiences Survey was analyzed separately using a Chi square (χ^2) analysis of frequencies. The only significant difference obtained between age categories was on question 17 "Trouble with employer (in danger of losing job, being suspended, demoted, etc.)" (χ^2 =8.44, df=3, p=.0377); and on question 36 "Major change in social activities, e.g., parties, movies, visiting (increased or decreased participation)" (χ^2 =8.18, df=3, p=.0424). On both questions the "older group" had significantly more negative responses than the "younger group".

Descriptive Statistics for the Younger and Older groups

	Mea	n	Medi	an .	Standard Deviation				
Variable	Younger	01der	Younge	r Older	Younger	01der			
Severity of Negative Life Events	20.25	27.88	18.5	27.9	9.20	21.29			
Beck Depression Inventory (BDI)	27.45	25.33	20.5	20.5	16.90	14.04			
Levenson's Locus of Control Internal Scale	32.54	36.96	31.5	37.0	4. 67	5.07			
Levenson's Locus of Control Powerful Others Scale	35.50	34.21	33.2	32.5	10.08	5.32			
Levenson's Locus of Control Chance Scale	31.83	35.00	30.5	36.5	6.15	6.33			
Number of Negativ Life Events	'e 9.29	11.42	8.8	9.0	3.98	7.80			

Hypothesis Testing

Hypothesis 1

With respect to age and the subjects' Depression Scores (as measured by the BDI), the results suggest that there is no statistically significant difference between the younger and older groups (F= .243, DF= 1,44, P= .624), (see Table 4). Consequently, with respect to the subjects' Depression Scores, the null hypothesis cannot be rejected. (See Table 5).

Hypothesis 2

With respect to gender and the subjects' Depression Scores (as measured by the BDI), the results suggest that there is no statistically significant difference between males and females (F= .993, DF= 1,44, P= .324). Consequently, with respect to the subjects' Depression Scores the null hypothesis cannot be rejected. (see Table 5).

Hypothesis 3

With respect to the age by gender interaction on the subjects' Depression Scores (as measured by the BDI), the results suggest that there is a statistically significant interaction between age and gender on the BDI Scores (F= 4.909, DF= 1,44, P= .032), (see Table 5). Therefore Hypothesis 3 is rejected.

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Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Group (Younger and Older)	54.188	1	54.188	0.243	0.624
Sex (Male and Female)	221.021	1	221.021	0.993	0.324
Group X Sex Interaction	1092.521	1	1092.521	4.909	0.032
Explained	1367.729	3	455.910	2.049	0.121
Residual	9791.750	44	222.540		
Total	11159.479	47	237 . 436		

Summary of the Analysis of Variance: Beck Depression Inventory Scores for Sex (Male and Female Subjects) and Group (Younger and Older Subjects)

Upon performing post hoc t-tests on the age and gender interaction, the following statistically significant differences were obtained. (see Figure 1).

Older males scored significantly higher than older females $(t_{46} = 6.43 \text{ P} \leq .01)$ on the BDI. Also older males scored significantly higher on the BDI than younger males $(t_{46} = 3.45 \text{ P} \leq .01)$. However, there was no significant difference between older males and younger females on the BDI $(t_{46} = .67 \text{ P} \geq .05)$.

The younger males were found to be significantly higher on the BDI than the older females ($t_{46}^{=}$.2.98 P \leq .01) and also the younger males were significantly lower than the younger females ($t_{46}^{=}$ 2.78 P \leq .01).

The younger females scored significantly higher on the BDI than the older females (t_{46} = 5.76 P=.01),

FIGURE 1

INTERACTION BETWEEN GENDER AND GROUP ON THE BECK DEPRESSION INVENTORY SCORES.



Hypothesis 4

As no statistically significant correlation was found between the number of Negative Life Events Scores (as measured by the LES) and the subjects' Depression Scores (as measured by the BDI), the null hypothesis could not be rejected. (See Table 6). However, when the severity of the Negative Life Events was partialled out, a significant negative correlation was obtained between the number of Negative Life Events Scores and Depression Scores (r= -.2795, P= .029). Therefore, there is evidence to reject the null hypothesis.

Hypothesis 5

As no statistically significant correlation was found between the severity of Negative Life Events Scores (as measured by the LES) and the subjects' Depression Scores (as measured by the BDI), the null hypothesis could not be rejected. (See Table 6). However, when the number of Negative Life Events was partialled out, a significant correlation was obtained between the severity of Negative Life Events Scores and the Depression Scores (r= .287, P= .025). Therefore, there is evidence to reject the null hypothesis.

Hypothesis 6

As no statistically significant correlation was found between the locus of control Internal Scale Scores (as measured by the Levenson's Multidimensional Locus of Control Internal Scale) and the subjects' Depression Scores (as measured by the BDI), the null hypothesis could not be rejected. (See Table 6).

Hypothesis 7

The correlation between the Locus of Control Powerful Others Scale Scores (as measured by the Levenson's Multidimensional Powerful Others Scale) and the subjects' Depression Scores (as measured by the BDI) was found to be in the order of .38 which was found to be significant at the P= .003 level. Consequently, the null hypothesis was rejected as there is a statistically significant correlation between the BDI and the Locus of Control Powerful Others Scale at the .05 level. (See Table 6).

Hypothesis 8

The correlation between the locus of control Chance Scale Scores (as measured by the Levenson's Multidimensional Locus of Control Chance Scale) and the subjects' Depression Scores (as measured by the BDI) was found to be in the order of .28. As this correlation is significant at the P= .02 level the null hypothesis can be rejected. Therefore a statistically significant correlation exists between the BDI and the Locus of Control Chance Scale Scores (see Table 6).

After the hypotheses were formulated, further consideration was given to the findings that there was a statistically significant difference between females on the Depression Score (F = 6.350, DF = 1,44, P = .020). It was found that married and common-law females scores higher on the depression scale (as measured by the BDI) than never married, separated, divorced and widowed females. The relationship between depression and marital status was therefore examined a posteriori.

Summary of the significant findings:

- A statistically significant interaction was found between the age and gender on the subjects' Depression Scores. (Hypothesis 3).
- Statistically significant partial correlation (negative) was found between the number of Negative Life Events Scores and the subjects' Depression Scores. (Hypothesis 4).
- Statistically significant partial correlation (positive) was found between the severity of Negative Life Events Scores and the subjects' Depression Scores. (Hypothesis 5).

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Pearson Product Moment Correlation Coefficients

Variable .	SEV	AGE	BDI	I	Ρ	C	NUBL
Severity (Sev) of Negative Life Events	-	r=.16 P=.13	r=.06 P=.32	r=.44 P=.001	r=.00 P=.49	r=.25 P=.03	r=.96 P=.01
Age	-	-	r=04 P=.37	r=.40 P=.002	r=.07 P=.31	r=.24 P=.05	r=.16 P=.14
Beck Depression Inventory (BDI)	-	-	-	r=04 P=.37	r=.38 P=.003	r=.28 P=.02	r=01 P=.48
Levenson's Multidimensional Locus of Control Internal Scale (I)	-	-	-	-	r=.15 P=.15	r=.38 P=.04	r=.43 P=.001
Levenson's Multidimensional Locus of Control Powerful Others Scale (P)	-	-	-	-	-	r=.43 P=.001	r=03 P=.41
Levenson's Multidimensional Locus of Control Chance Scale (C)	· -	-	-	-	-	-	r=.20 P=.08
Number of Negative Life Events (NUBL)	-	-	-	_	-	-	-

- 4. Statistically significant positive correlation was found between the Locus of Control Powerful Others Scale Scores and the subjects' Depression Scores. (Hypothesis 7).
- Statistically significant positive correlation was found between the Locus of Control Chance Scale Scores and the subjects' Depression Scores. (Hypothesis 8).

CHAPTER FIVE

DISCUSSION

As this study was concerned with stressful negative life events, depression and locus of control for two distinctive age groups, a factorial design aimed at evaluating the simultaneous effects of several independent variables (age, gender, number of negative life events and their severity, and the locus of control) was employed.

The major theme of the investigation was to identify the direct effect of each independent variable, i.e., stressful negative life events, locus of control, age, separately on the dependent variable, depression. In addition, the study was concerned with evaluating whether the effect of an independent variable (gender) on the dependent variable (depression) varies with age. It was anticipated that the study would serve three functions: firstly, to gain a better understanding of the connection between how individuals perceive their ability to have control over stressful negative life events, and why some individuals respond to such events with a depressive reaction and others do not. Hopefully, this understanding will be useful in enabling the therapist to define a more adequate approach toward the treatment of people suffering from depressive reaction, a common presenting problem in mental health clinics. The second purpose of the study is to contribute to the development and utilization of more appropriate assessment procedures. The third purpose of the study is to shed some light on the controversy surrounding the efficiency of one type of therapy versus another which will be discussed in detail later in this chapter.

Discussion of Hypotheses

The findings in the present study indicated that with respect to age and the subjects' Depression Scores there was no statistically significant difference between the younger and older groups (Hypothesis 1).

Holmes and Masuda (1974), Dekker and Webb (1974), and Uhlenhuth (1974) found that there is an association between age and depression. These researchers found "life stress" to be accountable for this relationship. Although the above-mentioned authors attempted to explain that with aging an individual is more prone to becoming depressed, they explained this hypothesis by utilizing negative life events as a mediator variable. The discrepancy between the findings of the current study and those of Holmes and Masuda (1974) and Dekker and Webb (1974) concerning "age" and "depression" might be explainable in terms of the type of research design and the variables utilized in their study. Another possibility might be that the distinctive age groups in their investigation included more "older" subjects than "younger" subjects whereas in the present study an equal number of subjects in each age category i.e., "older" and "younger" was used.

In the present study, with respect to gender and the subjects'

Depression Scores, the results suggest that there was no statistically significant difference between males and females (Hypothesis 2). This finding concerning gender was consistent with that of Freden (1982) who argued that gender is not predictive of depression. However, Freden (1982) offered an alternative explanation when he suggested that female employment status is relevant to depression. He found that when the study was undertaken that women working at home suffered depression much less often than women who were working outside of the home. The conclusion drawn is that "women working at home are not exposed to as many risks of a kind that threaten their self-esteem as those in paid employment" (p. 41). However, Silverman (1968) found that there is a significant relationship between depression and gender. Silverman (1968) has emphasized that: "There appear to be no exceptions to the generalization that depression is more common in women than in men, whether it is the feeling of depression, neurotic depression, or depressive psychosis" (p. 129). The discrepancy between the findings of the current research and that of Silverman (1968) concerning gender and depression might be explained by the fact that Silverman (1968) utilized more female than male subjects in his study.

In the present study, with respect to the age and gender interaction on the subjects' Depression Scores, the results suggest that there was a statistically significant interaction between age and gender on the Depression Scores (Hypothesis 3).

A possible reason for the significant interaction between age

and gender on the depression variable might be due to what Munro (1966) has described as "happiness in the marriage". In the present study, no statistically significant difference was found between older married males and single (separated, divorced or widowed) older males on the depression scale (as measured by the BDI). This discrepancy may be explained by considering the population from which the study's subject sample was drawn, i.e., males presenting themselves to a Mental Health Clinic for treatment. Also, although the subjects were asked about their marital status, they were not asked whether the marriage was happy or not.

There are some conflicting reports that depression is as common among single persons (Stenstedt, 1952; Odegaard, 1953). In the present study, it initially appeared that young, single, males scored higher on the depression inventory (as measured by the BDI) than younger married males. However, this was not found to be statistically significant. These findings tend to suggest that a combination of age, sex, employment and marital status can affect the level of depression.

In the present study, married and common-law females scored significantly higher on the depression scale (as measured by the BDI) than single females. The consideration of a mediator variable such as marital status helps derive a better understanding of the relationship between age and depression and gender and depression, respectively. Interestingly enough, the literature available regarding the interaction of gender and age on depression does not confirm or disconfirm the present findings mentioned above. The

decision to examine the relationship between depression and marital status was analyzed a posteriori by the present researcher for the above-mentioned reasons. The result was statistically significant, that is, married and common-law females scored higher on the depression scale (as measured by the BDI) than single females. These findings contradict the conclusion of the National Health Survey study (1970) which suggests that the highest rates of depression occurred among separated and divorced females. It should be noted again, that "happiness in the marriage" may be critical a factor (Munro, 1966; Renne, 1971) which may have influenced the findings, although this factor was not measured specifically in the present study. This finding may be explained by the demographics of the area of northeast and southeast Calgary from which the sample was drawn. Again, the married female subjects in this study had presented themselves to a Mental Health Clinic most often complaining of unsatisfactory marital relationships.

In summary, although there were no significant differences found between age alone and depression, and gender alone and depression, the age and gender did interact with depression. What appears to be an interaction between age and gender may, in fact, be the result of another variable which has not been controlled for in the study, for example, economic status. As it appears almost impossible to control for all the variables which could affect these findings (e.g., happiness in marriage, economic stability, employment status), the results of this investigation should be interpreted with caution.

The results pertaining to Hypothesis 4 indicated that there was no statistically significant correlation between the number of Negative Life Events and the subjects' Depression Scores. As it was impossible to obtain a pure measure of the relationship between the number of the Negative Life Events and the subjects' scores on the BDI (e.g., if a subject reports having experienced three Negative Life Events and his score on BDI is high, how would one know whether his/her score is related to the number of Negative Life Events or to the subject's perception of the severity of a negative life event?), the severity of Negative Life Events was partialled out. When the severity of Negative Life Events was partialled out, it was found that there is a negative correlation between the number of Negative Life Events and depression.

These findings are in agreement with Dohrenwend and Dohrenwend (1974) who pointed out that it is likely that the effects of life stress differ from person to person depending on their individual characteristics. Some persons may be greatly affected by even moderate levels of negative life change, whereas others may be affected very little by relatively high levels of life change.

In general, the individual's perceptions of the stressfulness of particular life events are the best predictors of whether Negative Life Events will be followed by a depressive reaction or not. This highly individual, idiosyncratic response to negative life events may be influenced by many factors, e.g., whether the events are anticipated or not, the extent to which the individual was in control of the event, whether there had been any antecedent,

related Negative Life Events. The complexity of this idiosyncratic response makes it virtually impossible to predict the relationship between a discrete event and response. However, the subjective negative weighting attributed to a stressful life event may determine its impact.

In the present study, there was no statistically significant correlation between the severity of Negative Life Events Scores and the subjects' Depression Scores (Hypothesis 5). However, when the number of Negative Life Events Scores was partialled out, it was found that there is a significant positive correlation between severity of Negative Life Events Scores and Depression Scores.

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM III, 1980),

"The severity of the reaction is not completely predictable from the severity of stressors. Individuals who are particularly vulnerable may have a more severe form of the disorder following only a mild or moderate stressor, whereas others may have only a mild form of the disorder in response to a marked and continuing stressor" (p. 299).

Hinkle (1959) has demonstrated that the healthiest people often showed little psychological reactions to events and situations which caused profound reactions in others.

Freden (1982) has pointed out that the connection between the number of negative life events and the person's perception of their severity may be a function of the individual's interpretation of the events. Consequently, stressful negative life events, in particular those which have the potential to affect self-esteem may set up a negative expectation. Freden (1982) suggests that a traumatic event may predispose the individual to expect that subsequent happenings will be negative and therefore traumatic (p. 43).

Abramson, Seligman and Teasdale (1978) state that the kinds of causal attributions people make to explain their lack of control, influence whether their helplessness will result in low self-esteem or whether their helplessness will generalize across situations and time. Attributing lack of control to internal factors may lead to lowered self-esteem, whereas attributing lack of control to external factors may not. Furthermore, attributing lack of control to stable factors (e.g., limited intellectual ability) should lead to helplessness deficits extended across time, because they imply to the individual that he will lack the controlling response in the future as well as now. Attributing lack of control to unstable factors (e.g., fatigue, illness or anxiety) could lead to wide generalization of helplessness deficits across situations because they imply that when the individual confronts new situations the outcome may again be independent of his responses. Alternatively, attributing lack of control to unstable, specific factors should lead to short-lived, situation-specific helplessness deficits. Finally, contrary to the original helplessness hypothesis, Abramson et al. (1978) assert that depressed affect occurs only in cases where individuals receive, or anticipate that they will receive, uncontrollable negative outcomes. In addition, the depressed affect associated with the occurrence of unfavorable outcomes will be greater when individuals attribute their lack of control over such outcomes to "internal" rather than "external" factors.

There is good empirical evidence from the cognitive study of

emotion to suggest that environmental experiences are not, in themselves, endowed with affective meaning but acquire this only after a process of interpretation within the personal cognitive framework of the individual (Lazarus, 1966).

Another variable to examine while discussing the relationship between stressful negative life events and depression is the nature of the instrument used to measure the number and severity of negative life events. The questionnaire employed in the present study (LES) was a self-report instrument. The positive properties of self-report instruments include the fact that investigator bias is reduced by having the individual who has experienced the phenomena being studied, respond himself. Self-report instruments have been found to be sensitive and reliable in a broad range of measurement contexts (Derogatis, 1982). On the negative side, self-report measures are open to response biases and defensive maneuvers on the part of the respondent. As such, there is a possibility that the scores obtained by using LES are influenced by unaccounted for variations in the subjects responses to the questionnaire (e.g., fatique, anxiety, lack of concentration, tendency to try to present himself in a "favourable light"). Therefore, the findings obtained by various researchers using this instrument (LES) could, in fact, reflect results from random fluctuations rather than a relationship between what they intended to measure. These random fluctuations were minimized in the present study by controlling the experimental conditions (e.g., holding environmental testing conditions constant), by using a reliable

measuring device to assess depression (see BDI and its reliability coefficient in the Methodology chapter and by selecting homogeneous subjects (i.e., clinical population) and placing the client at ease at the initial contact.

In the present study, no statistically significant correlation was found between the locus of control Internal Scale Scores and the subjects' Depression Scores (Hypothesis 6). This result is consistent with the work of Sarason and Johnson (1978), Cohen (1980) and Cromwell, et al. (1977). These researchers found that "internals" are less likely to experience a depressive reactions than "externals" because of their perception that negative events are controllable by their own actions.

The results pertaining to Hypothesis 7 and 8 show that there was a significant positive correlation between the Locus of Control Powerful Others and Chance Scale Scores and the subjects' Depression Scores as measured by the BDI. Levenson's multidimensional formulation of the locus of control construct was employed in this study. This construct offers a more complex and comprehensive perspective than the unidimensional approach, since it attempts to differentiate between two types of external orientation. These two types of external orientation are comprised of individuals who believe that "Powerful Others" are in control of their lives and those who believe that "Chance" or fate essentially control their lives. Both types are termed "externals" as they perceive something or someone other than themselves to be in control of their lives and actions. In the present study, a significant positive correlation

was found between the Locus of Control "Powerful Others" Scale Scores and the subjects' Depression Scores (Hypothesis 7). This suggests that those individuals who believe that powerful people have control of their lives and destinies, scored higher on the BDI.

A statistically significant positive correlation was also found between the Locus of Control Chance Scales Scores and the subjects' Depression Scores (Hypothesis 8). The plausible explanation of this finding might be that individuals who perceive themselves as having little control over environmental events, i.e. external in their locus of control orientation, tend to become more depressed than those who have an internal locus of control orientation, i.e., believe they have some power and control over their lives and destinies. Sarason and Johnson (1978) found that locus of control acts as a moderator variable in the relationship between negative life events and depression. The results associated with Hypothesis 8 help to confirm the notion introduced by these authors that the effects of negative life stress may be mediated by the degree to which individuals perceive themselves as having personal control over events. Sarason and Johnson (1978) demonstrated that it is the individual ("external") who experiences high levels of change but feels he/she has no control over events who is most susceptible to the effects of life stress, which could be expressed as a depressive reaction. Cohen (1980) adds further support to Sarason and Johnson's work with his finding that "internals" performed better on an unsolvable puzzle task and on a digit symbol task requiring speed and attentiveness than "externals"
(those who perceive themselves as having less control over environmental events). Internals did not succumb as readily to dysphoric feelings or cease in their efforts to solve the puzzle and digit symbol tasks as did externals. Cohen (1980) concluded that locus of control is certainly a moderator variable of stressful events and depression. As further evidence of this position, Cromwell, Butterfield, Brayfield and Curry (1977) found that "internals" seem better equipped to survive their ordeals, and became less depressed than the "externals". In the present study, the results generated from Hypothesis 7 and 8 are in keeping with the findings of Cohen (1980), and Cromwell, et al. (1977). Furthermore, the present study provided additional evidence that subjects who are externally oriented (as measured by Levenson's Multidimensional Locus of Control Powerful Others and Chance Scales) reported higher levels of depression as measured by the BDI.

In summary, the most significant finding of the present study is that "externally" oriented individuals are more likely to experience a depressive reaction in response to stressful Negative Life Events than "internally" oriented individuals. Also, a statistically significant interaction between age and gender on the Depression Scores was found. The number of Negative Life Events was significantly related to depression only when severity was partialled out. The severity of Negative Life Events was significantly related to depression only when number of Negative Life Events was partialled out.

Clinical Implications of the Study

The instruments used in this study, the Beck Depression Inventory, the Life Experiences Survey, the Levenson's Multidimensional Locus of Control Scales (Internal, Powerful Others and Chance Scales), could have many possible applications to a clinical practice. The following section will discuss possible implications for assessment and clinical treatment.

Assessment

In a clinical setting such as the Alberta Mental Health Clinic from which the subjects for the present study were obtained, the Beck Depression Inventory, the Life Experiences Survey and Levenson's Multidimensional Locus of Control Scales (Internal, Powerful Others and Chance Scales) could be utilized at the intake level. Such a setting is mandated to treat individuals experiencing significant mental health problems such as mood disorders, schizophrenia, anxiety and other disorders described in the DSM III. Use of the Beck Depression Inventory, for example, could provide a quick assessment of the client's potential level of depression. This information could help determine whether the client was appropriate to receive treatment in this setting or in an alternate setting. Information obtained from the Beck Depression Inventory in conjunction with information obtained from the Life Experiences Survey could also yield data necessary to evaluate the individual's acuity and potential to be "at risk". In other words, the clinic Intake Worker, with this data in hand, could assess quickly the

client's level of distress and potential for suicide. For example, if a client obtains a high score on the Beck Depression Inventory, he has scored on statements such as "I would kill myself if I had the chance " or "I feel that the future is hopeless and that things cannot improve". Also, knowledge of recent and/or cummulative negative life events mixed with clinical judgement will influence the Intake Worker's assignment of a priority to a new case. This would impact a decision to send a client to a psychiatric emergency department immediately, to offer them a clinic appointment in several days or week's time.

The Levenson's Multidimensional Locus of Control Scales (Internal, Powerful Others and Chance Scales) could be utilized by the clinic therapist receiving a new client to decide which therapeutic approach would be most appropriate to utilize, e.g., short vs. long-term, supportive vs. cognitive, individual vs. group therapy.

Treatment

Once the client has been identified as a candidate for clinical treatment, the information obtained from the scales used in this study should assist the primary therapist in formulating a more complete assessment of the client and the issues to be addressed in therapy more quickly than by teasing out these issues over several assessment sessions.

For example, use of the data obtained from the Life Experiences Survey may enable the therapist to identify some of the issues and events which have brought the client into treatment as it is

sometimes very difficult for clients to identify specific stressful events, past and present, in their lives. For example, change of job, birth of a new baby, although apparently positive, may be quite stressful and lead to a negative outcome such as a depressive reaction (post partum depression). The client may not be aware of this possible connection.

Information related to the client's locus of control should enable the therapist to choose the most appropriate therapeutic approach for the individual client. For example, a client with an internal locus of control may require a supportive approach initially to help them through their crisis and lead them back to taking responsibility and control of their lives. The "internal" client typically accepts his role and responsibility for his life and can cognitively reframe stresses so that they impact him minimally and he can then begin to formulate new strategies to function as usual. There are times, however, when an event such as an unexpected death impact even an "internal" individual greatly because this event has been produced by fate or chance. This is supported by the findings of Manuck, et al. (1975). The "internal" client needs a reasonable amount of time and support to adjust to this new event and return to normal functioning whereas an "external" client may perceive such an event as one more instance of "bad luck" and require initial support as well as long-term therapy to work on reframing and restructuring his perceptions of himself and the world at large (Beck, 1967).

Person-Centered Therapy as defined by Carl Rogers (1959) would

be appropriate in the supportive therapy phase. Reality-based, cognitively oriented therapy as defined by Beck (1967) and Glasser (1965) would be more appropriate in the secondary therapy phase in which the therapist assists the client to reframe and restructure his cognitions and perceptions. This approach is consistent with Abramson, et al. (1978) attribution theory which states that the kinds of causal attributions people make to explain their lack of control, influence whether their helplessness will be short-term or long-term. "External" clients appear to comprise the so-called "chronic" population and continue to re-enter the therapeutic revolving door unless they can be helped to re-orient their perceptions and locus of control (Caplan, 1974). These individuals may be seen initially individually and possibly later on in a group setting. It may also be anticipated that therapy will be long-term with this client group.

Limitations of the Study

The following are some limitations of the present study:

- The fact that the sample was selected from a psychiatric population attending the Calgary Northeast Mental Health Clinic does not permit generalization of the findings to the population of individuals experiencing a depressive reaction.
- 2. The geographic area from which the clinical sample was drawn was limited to Northeast and Southeast Calgary. The demographics of these areas of the city are largely

working-class, low-income, disrupted family constellations and transient.

3. Self-report measures were employed in this study. Use of the self-report instruments assumes that the subject can and will accurately describe his relevant experiences and behaviours without bias (e.g., social desirability, acquiescence) and certain defensive maneuvers.

The subjects in the present study were self-referred to the clinic. Consequently, it can be safely hypothesized that they wanted on-going treatment and therefore presented themselves as being depressed. This constitutes a threat to the external validity of the results (reactivity) and its generalizability.

Recommendations for Future Research

The significant a posteriori finding concerning marital status and depression points to a direction for future research. Previous research suggests that "happiness in marriage" (Munro, 1966) mitigates against depressive reactions. A future study addressing "happiness in marriage" as well as incorporating the measures used in the present study would help to clarify this statement.

Another hypothesis arising from the present study is that there is a greater proportion of "internals" in the normal, i.e., non-clinical population than "externals". A research design could be used in which the Levenson's Multidimensional Locus of Control Scales (Internal, Powerful Others and Chance Scales) would be

administered to a random sample of the non-clinical population and also to a random sample of the clinical population (those with a diagnosed mental health disorder). The hypotheses would be that there will be more internally-oriented individuals in the normal, non-clinical population and more externally-oriented individuals in the clinical population.

Another possibility for future research could test the efficacy of a reality-based, cognitively oriented therapeutic approach. A random sample of "externals" drawn from the clinical population could be administered the Levenson's Multidimensional Locus of Control Scales (Internal, Powerful Others and Chance Scales) preand post-therapy. One group of "external" would receive supportive Person-Centered Therapy as defined by Rogers (1959). A second group of "externals" would receive reality-based, cognitively oriented therapy as defined by Beck (1967) and Glasser (1965). The hypothesis would be that post-therapy, the second group of "externals" would test lower on the Levenson's Multidimensional Locus of Control (Powerful Others, Chance Scales).

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APPENDIX A

SUBJECT'S CONSENT FORM

I agree to participate in this study by answering three questionnaires as requested by Agnes Temesvary, Graduate Student, in Clinical Psychology.

I understand the purpose of this research is to learn more about stressful life events and how people react to the stress and tension they experience in their daily living.

I understand that my participation is of a purely voluntary nature, and that I may withdraw from the study at any time without penalty.

I understand that the data collected will be placed on my A.M.H.S. file.

I further understand that my name will not be used, the information collected will be held in strict confidence, and that any identifying information will not appear in print.

Date:

Signature:

Witness:

APPENDIX B

DEMOGRAPHIC VARIABLES

Age:

Gender:

Education:

Marital Status:

APPENDIX C

BECK DEPRESSION INVENTORY

- On this questionnaire there are groups of statements. Please read each group of statements carefully, then pick out the <u>one</u> statement in each group which best describes the way you have been feeling the PAST WEEK, INCLUDING TODAY. Circle the number beside the statement you picked. If several statements in the group seem to apply equally, circle each one. <u>Be sure to read all the statements in</u> each group before making your choice.
 - 1. 0 I do not feel sad.
 - 1 I feel sad.
 - 2 I am sad all the time and I can't snap out of it.
 - . 3 I am so sad and unhappy that I can't stand it.
 - 2. 0 I am not particularly discouraged about the future.
 - 1 I feel discouraged about the future.
 - 2 I feel I have nothing to look forward to.
 - 3 I feel that the future is hopeless and that things cannot improve.
 - 3. 0 I do not feel like a failure.
 - 1 I feel I have failed more than the average person.
 - 2 As I look back on my life, all I can see is a lot of failures.
 - 3 I feel I am a complete failure as a person.
 - 4. 0 I get as much satisfaction out of things as I used to.
 - 1 I don't enjoy things the way I used to.
 - 2 I don't get real satisfaction out of anything anymore.
 - 3 I am dissatisfied or bored with everything.

- 5. 0 I don't feel particularly guilty.
 - 1 I feel guilty a good part of the time.
 - 2 I feel quite guilty most of the time.
 - 3 I feel guilty all the time.
- 6. 0 I don't feel I am being punished.
 - 1 I feel I may be punished.
 - 2 I expect to be punished.
 - 3 I feel I am being punished.
- 7. 0 I don't feel disappointed in myself.

1 I am disappointed in myself.

- 2 I am disgusted with myself.
- 3 I hate myself.
- 8. 0 I don't feel I am any worse than anybody else.
 - 1 I am critical of myself for my weaknesses or mistakes.
 - 2 I blame myself all the time for my faults.
 - 3 I blame myself for everything bad that happens.
- 9. 0 I don't have any thoughts of killing myself.
 - 1 I have thoughts of killing myself, but I would not carry them out.
 - 2 I would like to kill myself.
 - 3 I would kill myself if I had the chance.

- 10. 0 I don't cry any more than usual.
 - 1 I cry more than I used to.
 - 2 I cry all the time now.
 - 3 I used to be able to cry, but now I can't cry even though I want to.
- 11. 0 I am no more irritated now than I ever am.
 - 1 I get annoyed or irritated more easily than I used to.
 - 2 I feel irritated all the time now.
 - 3 I don't get irritated at all by the things that used to irritate me.
- 12. 0 I have not lost interest in other people.
 - 1 I am less interested in other people than I used to be.
 - 2 I have lost most of my interest in other people.
 - 3 I have lost all of my interest in other people.
- 13. 0 I make decisions about as well as I ever could.
 - 1 I put off making decisions more than I used to.
 - 2 I have greater difficulty in making decisions than before.
 - 3 I can't make decisions at all any more.
- 14. 0 I don't feel I look any worse than I used to.
 - 1 I am worrked that I am looking old or unattractive.
 - 2 I feel that there are permanent changes in my appearance that make me look unattractive.

3 I believe that I look ugly.

- 15. 0 I can work about as well as before.
 - 1 It takes an extra effort to get started at doing something.
 - 2 I have to push myself very hard to do anything.
 - 3 I can't do any work at all.
- 16 0 I can sleep as well as usual.
 - 1 I don't sleep as well as I used to.
 - 2 I wake up 2-3 hours earlier than usual and find it hard to get back to sleep.
 - 3 I wake up several hours earlier than I used to and cannot get back to sleep.
- 17. 0 I don't get more tired than usual.
 - 1 I get tired more easily than I used to.

2 I get tired from doing almost anything.

- 3 I am too tired to do anything.
- 18. 0 My appetite is no worse than usual.
 - 1 My appetite is not as good as it used to be.

2 My appetite is much worse now.

3 I have no appetite at all anymore.

19. 0 I haven't lost much weight, if any, lately.

- 1 I have lost more than 5 pounds.
- 2 I have lost more than 10 pounds.

3 I have lost more than 15 pounds. I am purposely trying to lose weight by eating less.

no

yes

- 20. 0 I am no more worried about my health than usual.
 - 1 I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
 - 2 I am very worried about physical problems and it's hard to think about anything else.
 - 3 I am so worrked about my physical problems, that I cannot think about anything else.
- 21. 0 I have not noticed any recent change in my interest in sex.
 - 1 I am less interested in sex than I used to be.
 - 2 I am much less interested in sex now.
 - 3 I have lost interest in sex completely.

APPENDIX D

LIFE EXPERIENCES SURVEY

Listed below are a number of events which sometimes bring about change in the lives of those who experience them and which necessitate social readjustment. Please check those events which you have experienced in the recent past (6 months). Be sure that all check marks are directly across from the items they correspond to.

Also, for each item checked below, please indicate the extent to which you viewed the event as having either a positive or negative impact on your life at the time the event occurred. That is, indicate the type and extent of impact that the event had. A rating of -3 would indicate an extremely negative impact. A rating of 0 suggests no impace either positive or negative. A rating of +3 would indicate extremely positive impact.

	0 to 6 mo.	extremely negațiye	moderately negatiye	somewhat negative	no impact	slightly positive	moderately positive	extremely positive
1.	Marriage .	-3	-2	-1	0	+1	+2	+3
2.	Detention in jail or	•	•	•	•			
•	comparable institution	-3	-2	-1	0	+1	+2	+3
3.	Death of spouse	-3	-2	-1	U	Ŧ1	τZ	τJ
4.	Major change in sleeping							
	lass sleen)	-3	-2	-1	0	+1	+2	+3
5.	Death of close family member:	U	-	-	Ŭ		-	•
••	a. mother	-3	-2	-1	0	+1	+2	+3
	b. father	-3	-2	-1	0	+1	+2	+3
	c. brother	-3	-2	-1	0	+1	+2	+3
	d. sister	-3	-2	-1	0	+1	+2	+3
	e. grandmother	-3	-2	-1	0	+1	+2	+3
	f. grandfather	-3	-2	-1	0	+1	+2	+3
	q. other (specify)	-3	-2	-1	0	+1	+2	+3
6.	Major change in eating habits				,			
	(much more or much less food							
	intake)	-3	-2	-1-	0	+1	+2	+3
7.	Foreclosure on mortgage or							
	loan	-3	-2	-1	0.	+1	+2	+3
8.	Death of a close friend	-3	-2	-1	0	+1	+2	+3
9.	Outstanding personal		_	_	_		-	• •
	achievement	-3	-2	-1	0	+1	+2	+3

	0 to 6 mo	extremely negative	moderately negative	somewhat negative	no impact	slightly positive	moderately positive	extremely positive
10.	Minor law violations (traff tickets, disturbing the pear	ic ce,						
11.	etc. Male: Wife/girlfriend's	-3 -3	-2 -2	-1 -1	0 0	+1 +1	+2 +2	+3 +3
12. 13.	Female: Pregnancy Changed work situation	-3	-2	-1	0	+1	+2	+3
	responsibility, major change in working conditions, working hours, etc.)	e -3	-2	-1	0	+1	+2	+3
14. 15.	New Job Serious illness or injury o	-3 f	-2	-1	Ō	+1	+2	+3
15.	close family member:	-3	-2	-1	0	+1	+2	+3
	b. mother	-3	-2 -2	-1 -1	Ŭ O	+1 +1	+2 +2	+3 +3
	d. brother	-3	-2 -2	-1	0	+1	+2	+3
	e. grandfather	-3	-2	-1	0	+1	+2	+3
	t. grandmother	-3	-2	-1 _1	0	+1	+2 +2	+3 +3
	h. other (specify)	-3	-2	-1	ŏ	+1	+2	+3
16.	Sexual difficulties	-3	-2	-1	Ō	+1	+2	+3
17.	Trouble with employer (in			-				
	danger of losing job, being	-	-	-	-			
	suspended, demoted, etc.)	-3	-2	-1	0	+1	+2	+3
18.	Irouble with in-laws	-3	-2	-1	U	+1	+2	+3
19.	status (a lot better off or							
	a lot worse off)	-3	-2	-1	0	+1	+2	+3
20.	Major changes in closeness	of	_	_	-			
	family members (increased o	r						
	decreased closeness)	-3	-2	-1	0	+1	+2	+3
21.	Gaining a new family member	•						
	(through Dirth, adoption,	c)_3	_2	_1	0	+1	+2	+3
22	Change of residence	-3	-2	-1	0	+1	+2	+3
23.	Marital separation from mat	e	-	-	Ū	-	-	-
	(due to conflict)	-3	-2	-1	0	+1	+2	+3
24.	Major change in church							
	activities (increased or	2	~	7	0	. 1	.0	13
	aecreasea attendance)	-3	-2	-1	U	+1	47	тJ
	0 to 6 mo.	extremely negative	moderately negative	somewhat negative	no impact	slightly positive	moderately positive	extremely positive
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25.	Marital reconciliation with	-3	-2	_1	0	+1	+2	+3
26.	Major change in number of arguments with spouse (a lot	J	-	-	0	• ±		
27.	more or a lot less arguments) Married male: Change in wife's work outside the	-3	-2	-1	0	+1	+2	+3
28.	home (beginning work, ceasing work, changing to a new job, etc.) Married female: Change in busband's work (loss of job	-3	-2	-1	0	+1	+2	+3
	beginning new job, retirement etc.)	'- 3	-2	-1	0	+1	+2	+3
29.	Major change in usual type and/or amount of recreation	-3	-2	-1	0	+1	+2	+3
30.	(buying home, business, etc.)	-3	-2	-1	0	+1	+2	+3
51.	(buying car, TV, getting	-3	-2	-1	0	+1	+2	+3
32. 33.	Being fired from job Male: Wife/girlfriend having	-3	-2	-1	0	.+1	+2	+3
34.	abortion Female: Having abortion	-3 -3	-2 -2	-1 -1	0 0	+1 . +1	+2 +2	+3 +3
35.	Major personal illness or injury	-3	-2	-1	0	+1	+2	+3
36.	Major change in social activities, e.g., parties, movies, visiting (increased	•		7	0	. 1	. 0	
37.	or decreased participation) Major change in living conditions of family (build- ing new home, remodeling, deterioration of home	-3	-2	-1	U	+1	+2	+3
	neighborhood, etc.)	-3	-2	-1	0	+1	+2	+3
38. 39.	טזע Serious injury or illness of	-3	-2	-1	U	+1	+2	+3
40.	close friend Retirement from work	-3 -3	-2 -2	-1 -1	0 0	+1 +1	+2 +2	+3 +3

Appendix D (Continued)

	6	0 to mo.	extremel negative	moderate negative	somewhat negative	no impac	slightly positive	moderate positive	extremely positive
41.	Son or daughter leaving l (due to marriage, college	home ⊇,							
42.	etc.) Ending of formal schoolin	ng	-3 -3	-2 -2	-1 -1	0 0	+1 +1	+2 +2	+3 +3
43. 44.	Separation from spouse (to work, travel, etc.) Engagement	due	-3 -3	-2 -2	-1 -1	0 0	+1 +1	+2 +2	+3 +3
45.	Breaking up with boyfrien girlfriend	nd/	-3	-2	-1	0	+1	+2	+3
46.	Leaving nome for the first	ST	-3	-2	-1	0	+1	+2	+3
47.	Reconciliation with boyfriend/girlfriend		-3	-2	-1	0	+1	+2	+3
Othe have List	r recent experiences which had an impact on your li- and rate.	h fe.							
48.			-3	-2	-1	0	+1	+2	+3
49.			-3	-2	-1	0	+1	+2	+3
50.			-3	-2	-1	0	+1	+2	+3

APPENDIX E

LEVENSON'S MULTIDIMENSIONAL LOCUS OF CONTROL (Internal, Powerful Others, and Chance)

On the next page is a series of attitude statements. Each represents a commonly held opinion. There are no right or wrong answers. You will probably agree with some items and disagree with others. We are interested in the extent to which you agree or disagree with such matters of opinion.

Read each statement carefully. Then indicate the extent to which you agree or disagree by circling the number following each statement. The numbers and their meanings are indicated below:

If you	agree strongly:	circle +3
If you	agree somewhat:	circle +2
If you	agree slightly:	circle +1
If you	disagree slightly:	circle -1
If you	disagree somewhat:	circle -2
If you	disagree strongly:	circle -3

First impressions are usually best. Read each statement, decide if you agree or disagree and the strength of your opinion, and then circle the appropriate number.

GIVE YOUR OPINION ON EVERY STATEMENT

If you find that the numbers to be used in answering do not adequately reflect your own opinion, use the one that is closest to the way you feel. Thank you.

Appendix E (Continued)

	· · · · · · · · · · · · · · · · · · ·	Strongly Disagree	Disagree Somewhat	Slightly Disagree	Slightly Agree	Agree Somewhat	Strongly Agree
1.	Whether or not I get to be a leader depends mostly on my ability.	-3	-2	-1	+1	+2	+3
2.	To a great extent my life iscontrolle by accidental happenings.	d -3	-2	-1	+1	+2	+3
3.	I feel like what happens in my life i mostly determined by powerful people.	s -3	-2	-1	; 1	+2	+3
4.	Whether or not I get into a car accident depends mostly on how good a driver I am.	-3	-2	-1	+1	+2	+3
5.	When I make plans, I am almost certain to make them work.	-3	-2	-1	+1	+2 .	+3
6.	Often there is no chance of protectin my personal interests from bad luck happenings.	g -3	-2	-1	+1	+2	+3
7.	When I get what I want, it's usually because I'm lucky.	-3	-2	-1	+1	+2	+3
8.	Although I msight have good ability, I will not be given leadership responsibility without appealing to those in positions of power.	-3	-2	-1	+1	+2	+3

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Appendix E (Continued)

		Strongly Disagree	Disagree Somewhat	Slightly Disagree	Slightly Agree	Agree Somewhat	Strongly Agree
9.	How many friends I have depends on how nice a person I am.	-3	-2	-1	+1	+2	+3
10.	I have often found that what is going to happen will happen.	-3	-2	-1	+1	+2	+3
11.	My life is chiefly controlled by powerful others.	-3	-2	-1	+1	+2	+3
12.	Whether or not I get into a car accident is mostly a matter of luck.	-3	-2	-1	+1	+2	+3
13.	People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.	-3	-2	-1	+1	+2	+3
14.	It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.	-3	-2	-1	+1	+2	+3
15.	Getting what I want requires pleasing those people above me.	-3	-2	-1	+1	+2	+3
16.	Whether or not I get to be a leader depends on whether I'm lucky to be in the right place at the right time.	3	-2	-1	+1	+2	+3

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Appendix E (Continued)

		Strongly Disagree	Disagree Somewhat	Slightly Disagree	Slightly Agree	Agree Somewhat	Strongly Agree
17.	If important people were to decide they didn't like me, I probably wouldn't make many friends.	-3	-2	-1	+1	+2	+3
18.	I can pretty much determine what will happen in my life.	-3	-2	-1	+1	+2	+3
19.	I am usually able to protect my personal interests.	-3	-2	-1	+1	+2	+3
20.	Whether or not I get into a car accident depends mostly on the other driver.	-3	-2	-1	+1	+2	+3
21.	When I get what I want, it's usually because I worked hard for it.	-3	-2	-1	+1	+2	+3
22.	In order to have my plans work, I mak sure that they fit in with the desire of people who have power over me.	e s -3	-2	-1	+1	+2	+3
23.	My life is determined by my own actions.	-3	-2	-1	+1	+2	+3
24.	It's chiefly a matter of fate whether or not I have a few friends or many friends.	-3	-2	-1	+1	+2	+3

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