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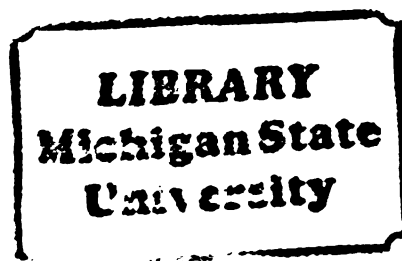
Constance M. Weil

has been accepted towards fulfillment
of the requirements for

Master of Arts degree in Psychology

Major professor
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THE RELATIONSHIP BETWEEN LIFE STRESS AND SYMPTOMATOLOGY
IN ALCOHOLIC AND NONALCOHOLIC FAMILIES

by

Constance M. Weil

A THESIS

Submitted to
Michigan State University
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ABSTRACT

THE RELATIONSHIP BETWEEN LIFE STRESS AND SYMPTOMATOLOGY IN ALCOHOLIC AND NONALCOHOLIC FAMILIES

by

Constance M. Weil

The present study examines the relationship between life stress and symptomatology among adults and children in alcoholic and nonalcoholic families. Children in the alcoholic families are at heightened risk for later alcoholism because of their male gender and having an alcoholic father. A variety of self-report and interview measures of life stress, physical health and psychological symptoms were utilized (with special attention to anti-social and depressive characteristics in adults and a broader range of symptoms in children). Results show a positive relationship between parents' life stress and children's life stress and symptomatology. There is some evidence that this connection is stronger between mothers and children and, in alcoholic versus nonalcoholic families, but replication is needed. When comparing groups, both parents in alcoholic families experience more stress and more symptomatology than their matched controls. No differences were found when comparing children's symptomatology between groups.

To the struggle and the discovery of self.

ACKNOWLEDGMENTS

I would like to express special thanks to Dr. Robert A. Zucker for his continuous support and understanding throughout the process of this work. I would also like to express thanks to the other members of my committee, Drs. Ellen A. Strommen and John Paul McKinney. A special thanks to my sister, Susan, whose love and patience made editorial revisions of this work possible. A special thanks also to Tom Packard whose statistical and computer talents made the data analyses much less stressful.

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES	vi
LIST OF FIGURES	vii
 CHAPTER	
I. Review of the Literature	1
Review of Stress Literature	3
Life Stress and its Measurement in Children	3
Life Stress and Symptomatology in Children	4
Moderator Variables in the Child's	
Stress-Illness Relationship	7
Life Stress and its Measurement in Adults	12
Moderator Variables in the Adult's	
Stress-Illness Relationship	18
Life Stress and Symptomatology in Adults	19
Review of Alcoholism Literature	25
Behavior Problems in Children of Alcoholics	25
Characteristics and Behavior of the	
Alcoholic Father and the Nonalcoholic Wife	26
Interactions and Characteristics of	
Alcoholic Families	28
Alcoholism and Stress Theory	30
Formal Predictions	31
 II. Method	 35
Subjects	35
Rationale	35
Selection	35
Procedure	35
Measures	40
Children's Measures	45
Measurement of Children's Stressful	
Life Events	45
Measurement of Children's Symptomatology	47
Parent Measures	50
Measurement of Stressful Life Events	50
Measurement of Adult Symptomatology	51
 III. Results	 58
Analysis	58
Life Stress Measures	59
Adult Symptom Measures	60
Child Symptom Measures	68
The Relationship Between Life Stressors	
and Symptoms	68
Individual Perceptions and the	
Stress-Symptom Relationship	73

	<u>Page</u>
IV. Discussion	78
Life Stress Findings	78
Adults	78
Children	79
Symptom Findings	80
Adults	80
Children	80
Stress-Illness Findings	81
A Theoretical Framework	82
Methodological Issues	84
Measurement Issues	85
Future Directions	86
 APPENDICES	
I. Contact and Data Collection Schedule	87
II. Individual Frequencies of Life Events	90
III. Correlations of a Family Life Event Measure and Adult Symptomatology	92
IV. The Anti-Social Behavior Questionnaire	93
 BIBLIOGRAPHY	 95

LIST OF TABLES

	<u>Page</u>
Table	
1 Average Amounts of Stress Experienced in a One Year Period by Children From a Normal Population	5
2 Significant Correlations Between Four Types of Subjective Evaluations of Life Events	17
3 Sociodemographic Characteristics of Alcoholic and Community Control Families	38
4 Alcoholic Diagnosis, Drinking Problem Scores, and Drinking Pattern Scores in Alcoholic Families and Community Control Families	41
5 Research Diagnostic Criteria (RDC) for Diagnosis of Alcoholism	43
6 Summary of Life Stress Study Measures	44
7 Amount of Life Stress Experienced by Adults in Alcoholic and Community Control Families	61
8 Symptomatology Reported by Adults in Alcoholic and Community Control Families	63
9 Symptomatology Experienced by the Target Children of Alcoholic and Community Control Families	69
10 The Relationship Between Family's Life Events and Children's Life Events	74
11 The Relationship Between Family's Life Events and Children's Symptomatology	75
12 Amount of Life Stress - Corrected by Subjective Weighting - Among Alcoholic and Community Control Families	77
13 Individual Frequencies of Life Events	90
14 Correlations of a Family Life Event Measure and Adult Symptomatology	92

LIST OF FIGURES

Figure	<u>Page</u>
1 Behavioral Patterns Resulting From the Interaction of Strong Versus Weak Self-Control and Active Versus Passive Responding	11
2 Life Events Mediation in the Family System	13
3 Model of the Life Stress-Illness Relationship	23

Chapter 1

Review of the Literature

One objective of research on life stress is to demonstrate an association, over time, between the onset of illness and a recent increase in the number of life events that require a certain amount of readjustment or adaptive responses from the individual (Rabkin and Struening, 1976). A life stressor temporarily upsets the balance of an individual's life and he/she needs to exhibit some kind of coping response in order to reestablish that equilibrium. Theoretically, an "unhealthy" or unsuccessful coping response will result in some kind of mental or physical illness.

The effects of life stress on behavior and ongoing functioning can take many forms. A quick survey of the Journal of Human Stress shows a connection between stress and return to heroin use, hypertension, infectious disease, depression, cancer, heart disease, accidents, athletic injuries, diabetes, and ulcers, to name a few. However, the connection between life stress and physical or mental illness is not one of direct cause and effect. Various mediating factors thought to be involved include age, sex, amount of readjustment needed, whether or not the change is desirable or undesirable, whether the stress involves an entrance or exit in the individual's life, personality factors, feelings of control, whether or not the event is short lived or has

persisting consequences, past experience, and social support (Rabkin et al., 1976; Rutter, 1981).

(The relationship of stress to functioning seems particularly pertinent and interesting for the alcoholic and his family. It may be that the alcoholic experiences a tremendous amount of stress, or is unable to cope with it successfully, so he turns to drinking as a way of "managing" the stress. This, in turn, would create a number of new stressors or symptoms: marital conflicts, health problems, loss of friends, loss of job, financial problems. The alcoholic's family would also be experiencing additional stressors: increased number of arguments, loss of income, illness of a close family member (Calahan and Cisin, 1976; Ablon, 1976).

The present study¹ is an examination of differences in the amount and type of stressors experienced by alcoholic² and normal families, and the difference in symptoms manifested by each of these groups. Although subjects are being studied at only one point in time,

¹The present study is one part of the Michigan State University Vulnerability Study directed by Robert A. Zucker, Ph.D.

²In this paper, the alcoholic family refers to a family containing an alcoholic father. The wife may or may not be alcoholic, although in the present work, by far the majority are nonalcoholic. Any children resulting from this marriage are referred to as children of alcoholics or high-risk children. Likewise, the phrase "alcoholic parents" refers to an alcoholic father, and, more likely than not, a nonalcoholic wife. The rationale for focusing on the male alcoholic is reviewed in a later section.

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the families being studied are sufficiently young that etiological leads may be suggested by the nature of the differences observed. The following literature review will cover the areas of stress, mediating variables, and maladjustment in children and adults, and the characteristics of alcoholic families and their children.

Review of Stress Literature

Life Stress and its Measurement in Children:

Normal stress research on children is still relatively new. Specific events such as maternal deprivation, divorce, and birth of a sibling have been studied separately, but the first life stress inventories for children were developed by R. D. Coddington in 1972 (Bowlby, 1973; Hetherington, 1972; Rutter, 1981; Coddington, 1972a, 1972b). These scales were patterned after the Holmes and Rahe Social Readjustment Rating Scale (Holmes et al., 1967), and are constructed for four different age groups: preschool age children, elementary age, junior high age, senior high age. Average amount of stress was calculated for each of the above age groups (N = 3620) in a normal population. No significant differences were found between boys and girls but racial differences were present. Specifically, black children in the two younger groups faced more life change than white children while the situation was reversed for the two older groups. However, the outstanding difference was the interaction between age and amount of stress with major jumps in amount of stress

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occurring between preschool and elementary school and again between elementary school and junior high school (Table 1). There is clearly some developmental effect. Coddington's explanation is as follows, "As a child expands his social sphere he risks the occurrence of more life events, good and bad" (Coddington, 1972b, p. 212). This conclusion is reasonable; yet, the age differences found in this study are questionable. It is not clear whether or not the measures of stress are comparable across age levels and if the list of life events are comprehensive for each age group. These studies do give us a general idea of what a "normal" amount of stress may be for a child.

Life Stress and Symptomatology in Children:

[Abnormal amounts of stress or an inability to cope with stress may produce behavioral problems in a child. Forbes categorizes a list of problems for parents that she calls signs of stress. Briefly, these include types of infantile behavior, withdrawal and depression, abnormally poor school behavior, constant drug use, aggression, and physical complaints (Forbes, 1978). All of these symptoms, with the exception of drug use, appear in a major study on childhood life changes reported by Hurme in 1981. Significant differences were found in the frequency with which subjects exhibited the above symptoms when the subjects were divided into groups according to the amount of life change experienced. Using both weighted and unweighted measures of life change, a child is significantly more likely to exhibit serious illness, fatigue, nervousness, bedwetting, crying, and aggression, if

Table 1

Average Amounts of Stress Experienced in a One Year Period
by Children From a Normal Population

<u>Age group</u>	<u>No. of life events</u>	<u>No. of life change units¹</u>
Preschool	1.73	64.99
Elementary	2.63	102.80
Junior High	4.11	195.66
Senior High	4.71	226.80

¹Life change units (LCUs) are equal to the amount of readjustment required for the total number of life events.

Adapted from Coddington, 1972.

he has a "high" level of life change. The researcher then factor analyzed the behaviors that significantly correlated with various indices of life change and labeled the categories as follows: weak self-control, sleeping problems, psychosomatic symptoms, diseases factor.

Although the researchers cited above are generally in agreement about the type of symptoms related to stress, there is less research on whether there are specific stressors associated with specific symptoms. One conclusion from studies on maternal deprivation is that normal infants who are separated from their mothers prematurely are unable to relate to anyone; they are inhibited, exhibit aggression and speech impairments, and are afraid to explore (Bowlby, 1973; Wolff, 1973). Similar behaviors are manifested by a child whose parent had died. They show increased shyness, timidity, and withdrawal. However, children from separated or divorced families are more likely to have aggressive, antisocial problems (Rutter, 1981). A different set of responses has been reported for children experiencing birth of a sibling. Over half of a sample of two to three year olds with new siblings cried more and showed new toileting problems, while one-fourth developed sleeping difficulties (Dunn et al., 1981).

{ A review of the literature suggests that type of parenting and family interaction can also be stressful for the child. } Bowlby comes to this conclusion as well; he believes it is not the succession of different caretakers but the lack of continuous mothering that affects the child (Bowlby, 1973). Parent response may also be the cause of the

stress related to a divorce or the birth of a sibling. In the first case, mothers often become depressed, self-centered, erratic, less supportive, and more ineffectual as a disciplinarian. Mothers may also be depressed and more inattentive to an older child at the birth of a new baby. Finally, in the instance of a hospital admission, a persisting disturbance is more likely if the child comes from a disturbed family or if the previous parent-child relationship was poor (Rutter, 1981).

A more methodical analysis of parental contribution to stress is reviewed in Wolff (1973). Wolff reviewed a study by Hewitt and Jenkins who found children's symptoms clustered to form three syndromes that significantly correlate with recognizable situational patterns. The results show that 1) unsocialized aggressive behavior is found in solitary children with backgrounds of parental rejection. 2) Socialized delinquent behavior (e.g. stealing, truancy) is found in children with backgrounds in parental neglect and delinquency in the family. And, 3) overinhibited and neurotic behavior in children is associated with a family containing an inconsistent father, a dominating mother and lack of sociability in either parent. Or, this behavior may also be associated with a chronic physical defect or illness in the child.

Moderator Variables in the Child's Stress-Illness Relationship:

In determining what a life stressor is for a child and what kind of problem, if any, will develop because of that stressor, we need to consider the child's resources for coping with any life change. Any

general definition of stress must include the individual being stressed. That is, a situation is or is not a stressor depending on the person's response to it, and that response is in part determined by the person's ability to cope with that situation (Coddington, 1972a; Holmes and Rahe, 1967; Rutter, 1981). The various factors that may be important in determining how an individual deals with a situation include age, sex, genetic factors, temperament, intelligence, social support, amount of stress, past experience, and other problem solving skills.

The relationship between amount of stress and coping ability is not linear, as one might expect. Hurme's research points to a U-shaped model as applied to life events. Specifically, large amounts of stress do correlate with a larger number of behavioral problems but so do small amounts of stress. A medium amount of stress is optimal for maximum adjustment. Hurme concludes that life events not only constitute negative threats but also function as developmental tasks (Hurme, 1981). (This writer notes that definitions of small, medium, and high amounts of stress vary from study to study.)

Sex of the child may have a direct or indirect influence on a child's ability to cope with change. Boys tend to be more vulnerable to stress than girls, though the reasons for this may vary. This may be biologically determined along with the increased male vulnerability to physical hazards. The salience of stressful events may sometimes be greater for boys. Or, it may be that parents are less supportive of boys in their attempts to cope with life changes. Parents may also

respond more negatively to boys' distress reactions. These patterns of interaction might have to do with the kind of behavior parents expect from sons, or might be determined by temperamental differences associated with sex (Rutter, 1981). The argument continues concerning whether or not temperament is genetically determined and if it changes over time. In either case it is still an important element in adaption to stress. For example, a child's temperament can reliably be used to predict his behavior after birth of a sibling (Rutter, 1981).

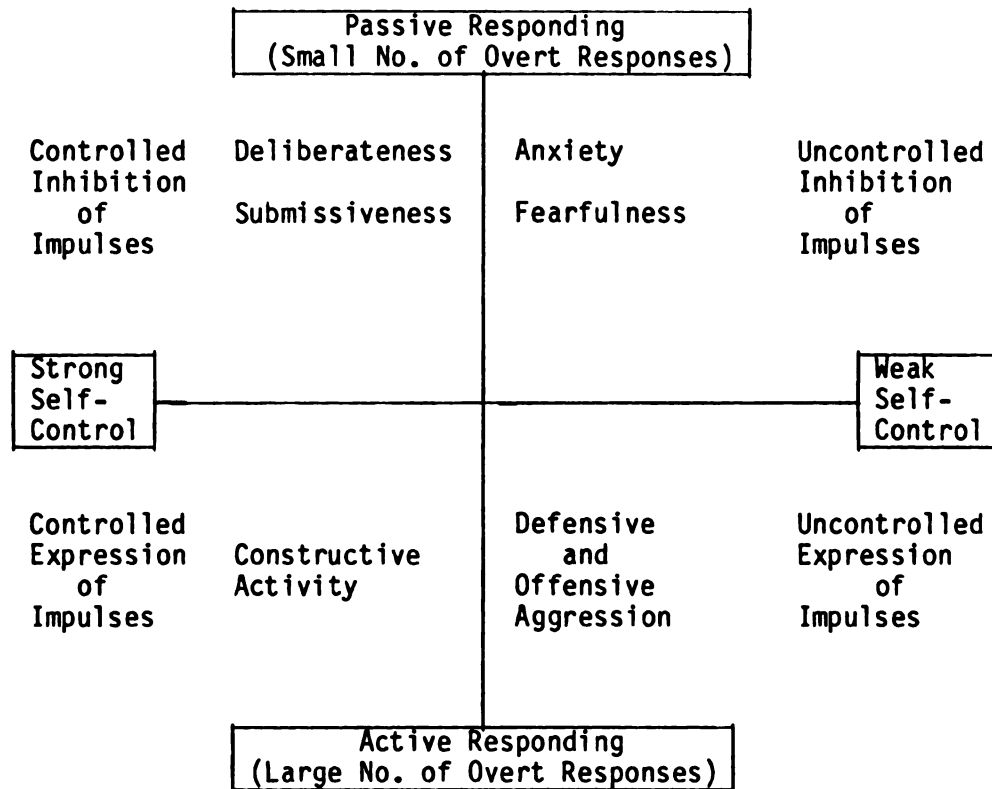
Age and developmental stage are other variables that may influence the impact of a life change. For example, the age of greatest risk for maladjustment resulting from a hospital admission is six months to four years. A child younger than six months has not yet formed any selective attachments, while a child greater than four years of age can cognitively understand that a separation is not the same as abandonment. Likewise, the younger child is also more likely to show disturbed behavior at the birth of a sibling, whereas in divorce situations, children of all ages exhibit problems (although type of problem may vary with age). Finally, at the death of a parent, younger children have immediate grief reactions that are milder and shorter compared to those experienced by adolescents and adults. This pattern is explained by the younger child's less developed cognitive level (Rutter, 1981).

A moderator variable in the stress relationship that is more in the category of learned competency is self-control. That is, stress leads to emotional and behavioral reactions which, in humans, are under

cognitive control; therefore, reactions to stress are under self-control. However, children and adults vary with respect to the amount of self-control they have internalized. (The amount of internalized self-control may be measured by locus of control scales.)

In using this concept, Hurme has rated children on two dimensions, strong versus weak self-control and active versus passive responding. These two dimensions combine to form different behavioral patterns that produce differences in coping with life situations. These different adaptations are diagrammed in Figure 1 (Hurme, 1981). A study using this model on groups at risk for aggression show that children with weak self-control have experienced more life changes than those with strong self-control (Hurme, 1981). These changes include divorced parents, mothers with shift work, fathers with shift work, and moving five or more times during the child's lifetime. The conclusion drawn from this study is that children with weak self-control have a more unstable environment and less parental guidance. In sum, weak self-control is associated with large amounts of change and leads to uncontrolled aggressive behavior.

[The Hurme study implies that parent behavior and family type influence how a child manages change. Modeling is one mechanism in this relationship. In other words, a child learns to manage stress in much the same way his parent does. Also, a child will learn to deal with situations more effectively if there have been rules and regulations to follow since infancy. Without these rules, it is hard for a child to discern behavioral expectations, i.e., to learn



Reproduced from Hurme, 1981.

Figure 1. Behavioral Patterns Resulting from the Interaction of Strong vs. Weak Self-control and Active vs. Passive Responding.

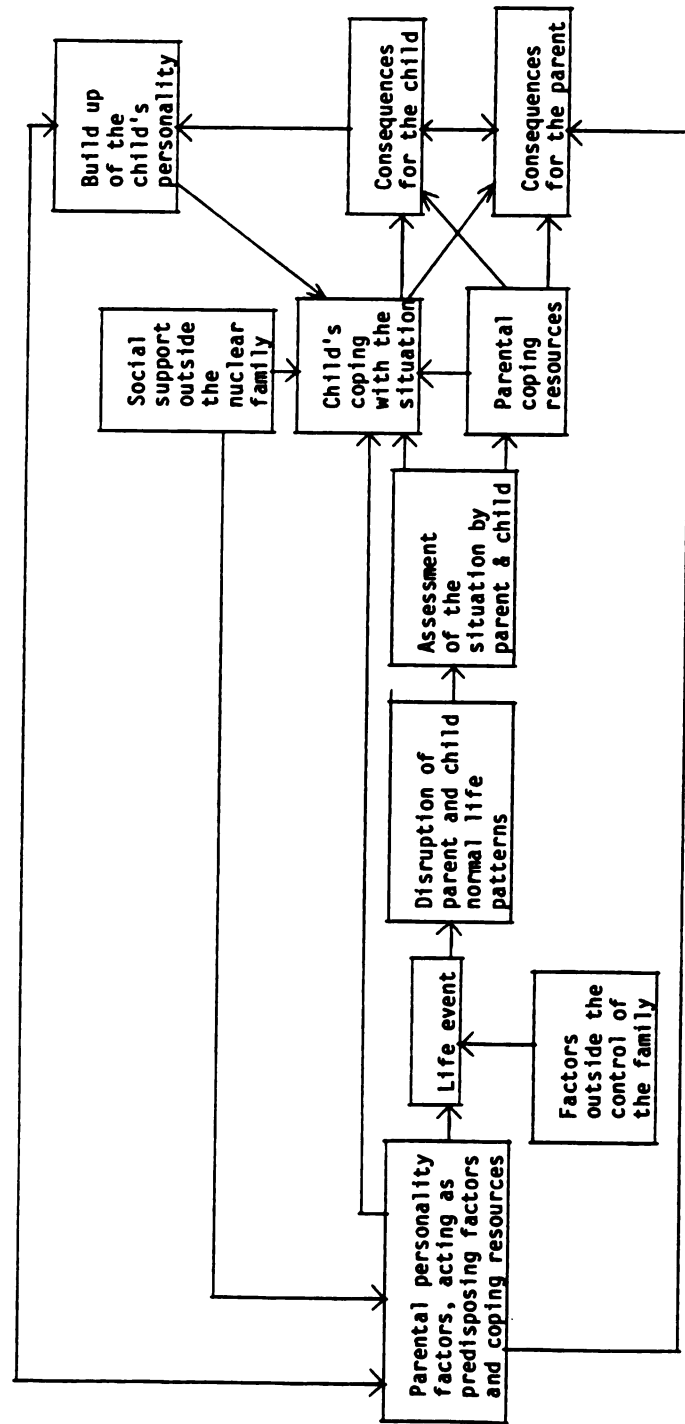
appropriate coping mechanisms. Lastly, a child needs parental trust and positive support. Without positive support of his other strong points, it will be difficult for a child to develop self-esteem. And, without trust, a child may develop feelings of uncertainty. Finally, the capacity to cope with frustration and stress in the presence of insecurities and in the absence of self-esteem is hindered (Forbes, 1978; Hurme, 1981).

The above review of stress and coping in childhood is full of variables and it is not always clear which are dependent and which are independent variables. The most comprehensive model this writer found was developed by Hurme and is diagrammed in Figure 2. It is described as a family model because the main world for the younger child is his/her family.

Life Stress and its Measurement in Adults:

The research on life stress in adulthood is much more extensive than that for childhood; yet, the type of research varies. In the adult literature there is much controversy on how to measure life stress and fewer studies, proportionally, on the specific psychological effects of life stress.

The most frequently cited measure of life events is the Social Readjustment Rating Scale by Holmes and Rahe (1967). Holmes et al. had 194 subjects rate 43 life events on the amount of readjustment required for each event. Readjustment scores were obtained by taking the mean score for each event and dividing by ten. Because this scale



Reproduced from Hurme, 1981.

Figure 2. Life Events Mediation in the Family System

is non-interval and has a skewed distribution of arithmetic means, the geometric mean was considered the best measure of central tendency. It discounts the extreme score but takes into account the distribution of scores (Masuda and Holmes, 1967).

There is strong agreement on the rank order of events and the magnitudes of the means as evidenced by high Pearson product moment correlations among various groups in the sample. Correlations by sex, marital status, age, generation, education, social class, and religion were all above .90. The lowest correlation was .82 between whites and blacks. All correlations were statistically significant (Holmes and Rahe, 1967).

A second study by Casey et al. examined the reliability of recall on life events. A sample of 54 subjects was given the same questionnaire nine months apart. Scores that differed by more than 40 life change units between time one and time two were considered discrepant. Individual items were also examined for consistency. Correlations between time one (1964), and time two (1965), focusing on recall of three separate years were .669, .638, and .744 for the years 1957, 1960, and 1963 respectively. Clearly, the more recent years are recalled more reliably; yet all three scores are significantly related at the .005 level. Despite the statistical significance, there were discrepancies. Thirty-two of 44 subjects scored non-discrepantly for one or two of the three years, with no consistent change in direction (i.e. more or less life events), for the discrepant years. More specifically, the items with higher readjustment ratings were recalled

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more consistently. Also, items that have qualifiers such as major/minor and more/less in the question, are prone to subjective interpretation and this may cause change in recall over time. In fact, there was a significant difference in recall consistency between items with qualifiers and those without. However, the saliency of the items and not the presence of qualifying words affected the consistency of recall the most. Items with double questions were also recalled less consistently. Finally, the amount of life stress at the time of recall did not influence the magnitude of scores recalled (Casey et al., 1967).

In sum, there is a strong reliability in the recall of life events. This conclusion is given additional support by Brown and Harris' study of life events. Their results show that the reported rate of events did not significantly drop off in the year before the events interview. That is, there was not a significant increase in the number of events reported in the more recent months (Brown and Harris, 1978). Though recall over time is fairly consistent, one identified bias in the initial reporting of events is the personal characteristic of denial. Those higher on the denial measure do report fewer life events than those low on denial (Cobb, 1974).

The main controversy in measuring life stress centers around the question, what is stressful about an event? Holmes et al. originally believed it was the amount of readjustment needed after an event occurred. Others believe it is the desirability or undesirability of the change, whether or not the event involves

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affiliative needs, if the event has short or long term effects, the degree of threat involved, or the number of events experienced in a certain period of time (Suls, 1981; Rahe, 1979; Cobb, 1974; Burchfield et al., 1982; Sarason et al., 1978; Brown and Harris, 1978). These researchers have objectively rated the desirability, impact, etc. of certain life events; yet, there are those that believe it is primarily the individual's subjective interpretation of an event that leads to its stressfulness or not.

Fontana et al. have based their research on the above hypothesis and measured individual perception of 1) the desirability or undesirability of an event, 2) the amount of readjustment required for an event, 3) the degree of anticipation prior to an event, and 4) the amount of control over an event. In sum, results show the subjectively desirable events were also those that required little adjustment, could be anticipated, and fell under the control of the individual. That is, the four types of evaluations are linked in some way. Also, various combinations of the four subjective evaluations significantly correlated with different areas of psychosocial adjustment. For example, events perceived as undesirable are strongly related to psychological disturbance. The specific significant relationships are presented in Table 2 (Fontana et al., 1979). These results might imply that certain types of subjective evaluations predict poor psychosocial adjustment in certain areas.

All of the studies reviewed in this section show a significant relationship between their own measure of stress and various types of

Table 2

Significant Correlations Between Four Types of Subjective Evaluations of Life Events and Psychosocial Adjustment¹

<u>Psychosocial Adjustment</u>	<u>Subjective Evaluation</u>			
	<u>Perceived Desirability</u>	<u>Perceived Adjustment</u>	<u>Perceived Anticipation</u>	<u>Perceived Control</u>
Extent of:				
Psychological Disturbance	-.35**	.48**	-.26*	
Interpersonal Involvement			-.28*	
Alcohol Abuse				.33**
Outside Social Participation	.29*			
Employment		-.41**		

* $p < .10$

** $p < .05$

¹Subjective evaluations involve the individual's perception of the desirability of the event, the amount of readjustment it will require, how much the event was anticipated, and the degree of control he/she felt over the event.

Adapted from Fontana et al., 1979.

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illness. However, Rahe's comment in 1979 still applies now. "The superior utility of any life change scaling method over a simple counting of the number of events, per unit time, has yet to be demonstrated convincingly" (Rahe, 1979; p. 4). This statement is not meant to negate the value of these different classifications but implies that they may be better understood as moderator variables in the stress-illness relationship.

Moderator Variables in the Adult's Stress-Illness Relationship:

A major study on moderator variables in the stress-illness area was conducted in 1981 by Cooley et al. Briefly, their results show low sensation seekers have a stronger relationship between life events and physical disorders compared to high sensation seekers. Low sensation seekers are described as avoiding novel situations. On a health locus of control measure, there was no significant difference between internals and externals in the stress-illness relationship. On more general measures of locus of control, previous studies have shown externals have higher correlations between stress and illness (Suls, 1981). Cooley also found significantly higher stress-illness correlations for introverts vs. extroverts, and for those who perceive the world through their senses vs. by intuition.

Another variable that moderates the effects of stress on an individual is the extent of one's social support. This support includes relationships in the family, at work, at church, and with friends. Research results support the hypothesis that decreases in

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social support in family and work environments would be linked to increases in psychological maladjustment over a one year period (Holahan et al., 1981).

Lastly, age is also a characteristic to be considered in assessing the importance of a life event. Forty-five to sixty year old subjects showed an inverse relationship between life stress scores and age. This may mean stressful life events decrease with age. Or else, the event scales do not include events relevant to older people or events that are age related (e.g. empty nest, menopause, retirement). Age related events may allow "anticipatory coping" which may decrease their potentially stressful impact. Age might also mediate stress because it involves the accumulation of life experience and a larger repertoire of coping skills. Clearly, more detailed research needs to be done to fully understand what aspects of age are mediating stressful life events (Lazarus and DeLongis, 1983). What these studies do demonstrate is that individuals will have different characteristics that will make them more or less vulnerable to the negative effects of stressful life events.

Life Stress and Symptomatology in Adults:

One of the most thorough studies of life stress and symptomatology was done by Brown and Harris in 1978. They set out to study the etiology of depression in women and analyzed the effects of different types of events in great detail. Their samples included depressed patients and general population controls. The only events that

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occurred at a higher rate in the depressed sample involved moderate or marked long term threat and/or a focus on the individual alone or in a relationship. (Long term threat implies that the consequence of the event follows a week or longer after its occurrence.) These "severe" events usually involve some kind of loss or disappointment and are most likely to cause depression.

Brown et al. also examined the additivity of events, their long and short term effects, and their causal vs. triggering effects. The results are as follows: in comparing number of events experienced by depressed patients and normals, 60% of depressed patients and 75% of normals experienced one severe event in a 38 week period. Twenty-one percent and 8%, respectively, experienced three or more severe events. The difference between depressed patients and normals, when comparing proportions experiencing three or more events, was significant at the .05 level. Significantly more depressed patients also experienced three or more nonsevere events compared to controls. Therefore, an increased number of events in a certain time period is more likely to produce maladjustment.

By examining the number of weeks before depression onset that an event occurred, one can determine the short or long term effect of that event. Results show that 30% of the severe events occur within nine weeks of onset while 4.6% of these events occur 37-45 weeks before onset. That is, most severe events quickly lead to depression. This usually happens within nine weeks and in almost all instances, within

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six months. The less severe events do not appear to have the same long term effects. This phenomena is described in more detail below.

Finally, Brown and Harris wondered if their severe events were having a triggering or formative effect on depression. To determine this, the researchers computed a Time brought forward (Tbf) equation which estimates how long it would have been before the onset of depression if an event had not occurred. The longer this time, the more likely the event played a formative role because the depression was hastened to such a large degree. The results of this type of analysis show severe events play a formative role in depression with the average Tbf equal to 2.13 years. Minor events play a triggering role with a Tbf averaging 10 weeks. The role of events in the onset of schizophrenia differs somewhat. That is, only events in the three week period right before onset appear capable of influencing schizophrenia. Events play a triggering role in this disorder. We may conclude that not only do different types of events play different roles in the onset of disorder, similar events may lead to different disorders (depression vs. schizophrenia) based on another moderator variable.

Minor events clearly function differently than severe events but there may be a connection between these two types of events. Specifically, a minor event may cause a woman to reassess the impact of an earlier major event. This may lead to hopelessness and depression. For example, going to a friend's husband's funeral may trigger a repressed memory of her own husband who died five years earlier (Brown and Harris, 1978).

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All of the above findings complicate the relationship between life stress and illness. First, an event may or may not be stressful to a person depending on his individual characteristics and those of his environment. Second, events themselves may vary in effect depending on their severity of threat, their term of effect, and whether or not they occur alone or in close proximity to other events. These statements are based on the Brown and Harris research (1978). A possible model for these relationships is outlined in Figure 3.

The following studies help to clarify the complex relationship between stress and symptomatology. More characteristics of stress are examined as well as other types of maladjustment.

Like Brown and Harris, E. S. Paykel also conducted a study on depression but focused completely on the specific types of life events that preceded the depression (Paykel, 1974). In an overall analysis, depressives reported three times as many events as controls. Suicide attemptors report more events than depressives who in turn report more events than schizophrenics. There were also significant differences among these groups on the category or type of event they experienced. That is, depressives had significantly more exits from their social field than controls. Depressives also experienced significantly more negative events, and health, and law-related events. In comparing both experimental groups, depressives reported experiencing more exits, negative events, and finance and health related events compared to the schizophrenic group. According to Paykel,

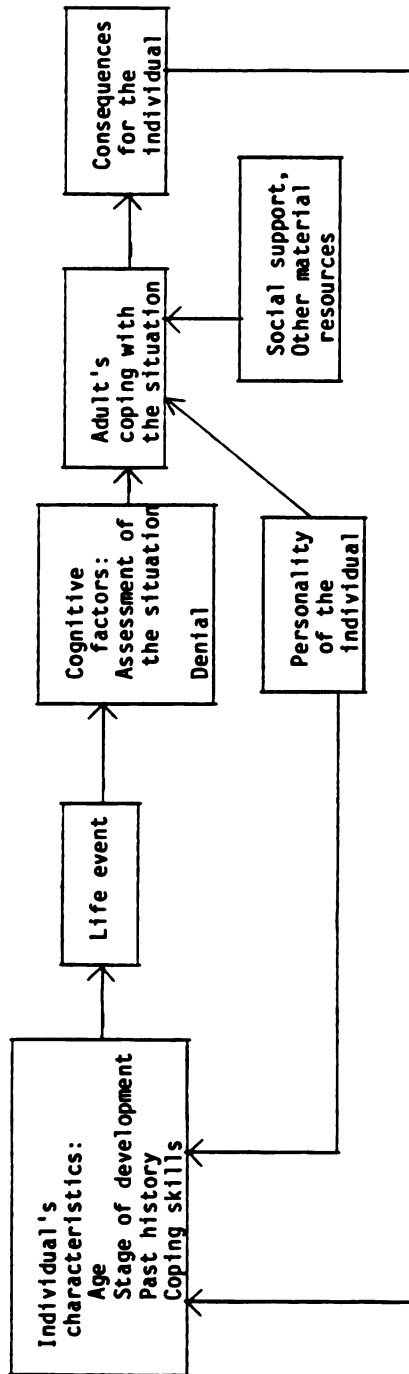


Figure 3. Model of the Life Stress-Illness Relationship

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These findings do give some indication of specific relationships. Only certain kinds of events precede depression. It is not just a question of magnitude of life change; the direction of the change and its desirability are also important. However, the link between event and disorder is far from exact. (Paykel, 1974; p. 138)

Rahe did a study comparing life stress in schizophrenics and neurotics and found similar results. Both groups reported an increase in the number of life events prior to symptomatic onset, with neurotics reporting twice as many life changes during the three months prior to onset (Rahe, 1979).

Sarason et al. expanded the types of maladjustment they were examining but limited the type of events they focused on. They looked at the relationship between adjustment and positive, negative, and total amount of change. Results showed one significant correlation with positive change: positive change is significantly related to extraverted expression. Significant correlations with negative change include greater trait and state anxiety, social nonconformity, neuroticism, current depression, and an increased external locus of control. The only significant correlations for total change scores were with the two anxiety measures (Sarason et al., 1978).

The most general conclusion to draw from all of these studies is that different types of stressors influence different types of maladjustment. The specific relationships are not clear and need to be focused on more directly. One such relationship may be the interaction between an individual's perception of stress and pathology. The fairly consistent relationship between an external locus of control and

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increased pathology may indicate that individuals who see stressful events as out of their control may be more vulnerable than those individuals who believe they have control over those same events. This external locus of control is also found in alcoholic families (reviewed later) making it another area to explore when comparing alcoholic and normal control families.

Review of Alcoholism Literature

Research in this area has produced varied and often contradictory results. Part of this is due to poor methodology: few matched control groups, strong reliance on retrospective or self-report data. In addition, samples include alcoholics at different stages in the disease and children of different ages. However, there are results that consistently reappear in the research and are presented below.

Behavior Problems in Children of Alcoholics:

[The presenting problems of these children cover a wide range and fall into the following general categories: physical complaints, identity problems, emotional problems, behavioral problems. The identity problems include lower self-esteem, a reluctance to grow up and assume age appropriate roles, more external locus of control, an inability to form relationships, and confusion over sexual identity (Blane and Hewitt, 1979; Jacob et al., 1972). Physical problems

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include increased numbers of accidents and illnesses, headaches, and increased fatigue (El-Guebaly et al., 1977; Jacob et al., 1978; Nylander et al., 1982). The behavioral problems presented cover the widest range of complaints. They include underachieving in school, enuresis, nightmares, nailbiting, speech disorders, impulsiveness, hyperactivity, and more aggressive acting out. This latter problem involves temper tantrums, fights with peers, and delinquency that involves the police and courts (Blane and Hewitt, 1977; Herjanic et al., 1977; Jacob et al., 1978; El-Guebaly et al., 1977). Lastly, the more emotional symptoms include neurosis, hysterical symptoms, depression, increased dependency, anxiety, emotional lability, and withdrawal (Blane and Hewitt, 1977; Jacob et al., 1978; Nylander et al., 1982).

None of the above problems have been consistently linked to the severity of the alcoholic's drinking or to any set type of family environment; yet, general patterns of parent and family interactions and characteristics have been formed. One aim of this study is to examine the behavioral and emotional problems exhibited by these high-risk children and any link that may exist between their symptomatology and the stress present in their family.

Characteristics and Behavior of the Alcoholic Father and the Nonalcoholic Wife:

Early research indicated that wives of alcoholics had a certain personality type--domineering and "masculine". The more recent

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research takes a more social/environmental perspective and offers the following theories. Jacob et al. demonstrates moderate support for the "stressed wife" theory, e.g. a wife's tendency to ignore changes in her husband's drinking behavior is seen as adaptive--it is a realistic recognition of his undependability. Ablon's study of Al-Anon wives might support this theory. She proposes that wives' behavior will change over time, and may change with the husband's drinking stage. Five reasonably separate types of behavior observed include 1) family protectiveness, 2) withdrawal within the marriage, 3) attacking others, 4) acting out, 5) safeguarding family interests. Adding to the stress theory, more women married to alcoholics vs. nonalcoholics reported having an inadequate mother and an unhappy childhood. This also made them more likely to experience both personal sources of stress and symptoms of personality disorder. Wives of alcoholics without unhappy childhoods managed to handle their situation without the personality decompensation (Ablon, 1976). Perhaps these women never learned good coping skills as children so any added stress caused greater maladjustment.

Ablon also presents characteristics of an alcoholic father. First, he has an inability to take appropriate responsibility within the family. Second, he lacks self-discipline and third, he is overly dependent. Fourth, the alcoholic father is preoccupied with himself, and fifth, suffers from a sense of inadequacy. Sixth, he has a negative attitude toward authority as well as taking an unrealistic and

immature approach to things. Finally, he has limited interests and relates to other people in a superficial manner (Ablon, 1976).

These researchers have listed the above as characteristic of the alcoholic and his spouse. Even so, these behaviors/characteristics/events seen in marriages complicated by alcoholism may be similar to those seen in other marriages. That is, the alcoholism is an added complication, or stress, but it does not necessarily influence parents' behavior (Jacob et al., 1978). Whatever the cause, individual behaviors do influence marital and family interactions. This raises questions about the interaction of alcoholism, stress, and behavior. Does alcoholism cause more or different kinds of stress in families or does it influence how people react to already present stressors and modify their behavior? The current study will begin to explore these questions.

Interactions and Characteristics of Alcoholic Families:

{ The marital relationship between an alcoholic and his wife is full of conflict, with poor communication and resolution of that conflict. Alcoholic couples do report more frequent disagreements and quarrels as compared to normal population controls. These quarrels are characterized by physical or verbal abuse, silence, walking out, or moodiness (Ablon, 1976). } Any attempt to settle conflicts meets with little success because of the rigid, competitive style of communication these couples have. Each spouse is sending "one-up" messages to the other and tries to gain control of the situation. The alcoholic commonly

uses a "responsibility-avoiding" style in an attempt to obtain control through passive, dependent-appearing ways. On the other hand, the nonalcoholic spouse uses an opposite, "responsibility accepting" style to gain control with action and independence. With this competitive but complimentary manner of communicating, the alcoholic couple have difficulty in achieving joint goals (Gorad, 1971).

[Children of these marriages also see their parents in conflict and rate their families significantly lower in harmony than children of nonalcoholics (Jacob et al., 1978).

In addition to high levels of conflict, these families often include fathers who change jobs frequently. They also have more separations and divorces, more mothers working outside the home, and parents who demonstrate inconsistency, unpredictability, and a failure to fulfill their parental responsibilities (Blane and Hewitt, 1977; Jacob et al., 1978; Zucker, 1976).

[These are the kind of families that also produce alcoholics. Thus, adolescents who are heavy drinkers will describe their parents as follows: both parents are also heavy drinkers, they are more cynical and antisocial, and their child rearing is marked with open rejection and less parental controls. In addition, disciplinary techniques center around deprivation of privileges and property plus social isolation (Zucker, 1976).

Zucker describes two basic functions of the family as a group. The first is maintaining the group through affectional interactions within the family. The second is a more task oriented function that

involves the socialization of offspring. This is accomplished via parent reward structure and modeling alternative ways of behaving. Zucker goes on to review these functions in families with adolescent drinkers and finds that both tasks are carried out poorly. Group maintenance breaks down because of increased parental absence, high levels of family conflict and the evidence of open rejection between spouses and between parents and children. In the area of socialization tasks, children see the reward structure as containing little praise or positive reinforcement, along with arbitrary discipline and many inconsistencies. Modeling fares no better with parents exhibiting alienation, cynicism, and a difficulty in accepting society's rules. Also, if a parent is not held responsible for his behavior while drinking, the children may adopt this same drinking behavior.

Alcoholism and Stress Theory

In comparing the alcoholic family with a family under stress, it is clear that there are many similarities. Thus, a model of the alcoholic family can be formed that is a parallel in many ways to Hurme's model of life events mediation. Specifically, the alcoholic's family experiences a number of stressful life events such as a high number of arguments, job changes, and separations. These disrupt established life patterns and require assessment and coping responses. However, due to poor communication styles, little family support, and rigid patterns of coping, the family has few healthy ways of dealing

with stress. For the parents, this may mean turning back to drinking, or for the alcoholic's spouse, denial or escape. For the children, coping may involve withdrawal, acting out, developing somatic complaints, or drinking like their parent.

There are also other "outside" factors that influence this chain of events: the age of the child linked with amount and type of peer contact, the personality factors of the individuals, the support system outside of the family. Strong peer relationships for the children are likely to be impaired due to the children's difficulty in forming relationships. And, outside social support may be hindered because of denial and withdrawal mechanisms. In sum, the stress model presented for the alcoholic family is a bleak one. The chances for some type of maladjustment developing out of systems stressed by alcoholism appears high. Problematic intake causes added stressors and/or contributes to a problematic family environment.

Formal Predictions

In the present research the stress-symptomatology relationship is examined between alcoholic and nonalcoholic families. The following hypotheses are based on an etiological model but will be tested on cross-sectional data.

1) Alcoholic parents and children experience more personal life stressors than normal controls.

This prediction is based primarily on the level of interpersonal conflict reported in alcoholic families (Jacob et al., 1978; Ablon, 1976). The same number of work and financial related stressors may occur in control and alcoholic families due to the environmental vs. personal control of these events. (On a slightly different track, the alcoholic family's ability to cope with the same stressors may be diminished because of poor communication and conflict resolution which could lead to greater levels of pathology in these families when compared to normal families.) There may also be more home and family related stressors in the alcoholic group because of the alcoholic's inability to take appropriate responsibility within the family, his overdependence, and his immature approach to things (Ablon, 1976).

2) Alcoholic parents show more symptoms of both depression and hostility.

Withdrawal and aggressive acting out are identified patterns of reaction in a wife of an alcoholic. The alcoholic husband feels inadequate and also tends to be antisocial (Ablon, 1976; Zucker, 1976). In addition, depression appears to be a common reaction to stressors of an interpersonal nature (Brown and Harris, 1978; Paykel, 1974).

3) Children of alcoholics show more symptoms of impulsivity and aggression, as well as fewer peer relations than their normal counterparts.

Earlier research on these high-risk children has shown more identity problems, lower self-esteem, impulsiveness, hyperactivity, fights with peers, and delinquency (Blane and Hewitt, 1977; Herjanic et al., 1977; Jacob et al., 1978; El-Guebaly et al., 1977; Nylander et al., 1982). The poor self-esteem, identity issues and aggression might each have a negative influence on friendship formation.

4) There will be a positive relationship between parents' level of stress and children's level of stress and symptomatology.

Hurme's model of life events mediation in the family system includes a loop where the same events affecting the parent may directly affect the child. Yet, the consequences of that event for the parent also affect the child (Hurme, 1981). In addition, if the alcoholic parent acts as an additional stressor for the child or as a poor mediator between stress and the child, he is a moderator variable in the child's stress-illness interaction. Finally, the parent does act as a model and teacher of coping responses for his child (Forbes, 1978; Hurme, 1981).

5) Individual perceptions of stress will moderate the stress-illness relationship.

Sarason et al. had subjects rate separately the desirability and impact of each event they experienced. By summing the impact ratings of all events labeled positive and summing the impact ratings of all

events labeled negative, they obtained positive and negative change scores, respectively. The results showed significant correlations between negative change and discomfort, anxiety, depression, social nonconformity, and external locus of control. A significant correlation was found between positive change and extraversion. Their conclusion is that personal interpretations of change as positive or negative are good predictors of personal maladjustment (Sarason et al., 1979). Fontana et al. came to similar conclusions when their results showed individual ratings of desirability and amount of adjustment an event would require correlated significantly with measures of psychosocial adjustment (Fontana et al., 1979).

Chapter 2

Method

Subjects

Rationale:

This study attempts to examine the relationship between one parent's alcoholism, and children's increased risk for behavioral and emotional problems which might be precursors to later alcoholism within those families. Due to the higher rate of alcoholism among males and higher rates of alcoholism among relatives of alcoholics versus relatives of nonalcoholics, the children targeted in this study are all male offspring (Cotton, 1979). Thus, male children coming from families with an alcoholic father are at a higher risk for later drinking problems than male children from nonalcoholic families. The elevated risk is of the order of 4 to 6 times as large as it is for the general population.

Selection:

Alcoholic families were recruited from the population of males convicted in local district courts for driving while impaired (DWI) or driving under the influence (DUIL). The potential sample included all

males convicted of the above offenses and who registered a blood alcohol level of 0.15% (150 mg./100ml.) or higher when arrested. In addition, the men had to be currently married, living with their spouse, and have a son between the ages of 2.5 and 6.0 years. When an individual met these criteria, the family was contacted by a project member and told we were conducting research on family health and child development. At this point, a time was arranged to meet with the family and explain the project and time commitments in greater detail.

All of the alcoholic families contacted in this manner agreed to participate. The sample for the present research eventually consisted of nine families. The use of this n rather than a larger one is purely a practical one. Although data continue to be collected from more families, to use a larger n would have inordinately delayed the completion of this thesis.

Community control families were located for each alcoholic family involved in the study. The family was matched to control for age (+/- six months) of the target child. In addition we attempted to match for birth position of the target child, as well as sibling constellation. Last, by locating control families in the same census tract as the alcoholic families, it was generally likely that the families would be matched on socioeconomic background as well. This was verified later.

After an alcoholic family was recruited, a list of potential control families was formed by a door to door canvass of the homes, starting one block away from the experimental family. Ninety percent

of the families contacted at this point gave the project staff their name, phone number, and ages, sex and numbers of children. Canvassing ceased when a perfect match was obtained on the relevant criteria or when five potential families were found with appropriate aged sons. In this latter case, the recruiter and the project director chose the family that most closely fit the criteria. Every family selected from these lists agreed to participate in the study.

In order of priority, the relevant criteria are age of the target child, the type of home (avoiding clear economic discrepancies), similarity in the age/sex distribution of the siblings and, overall family size (Rutter, 1981; El-Guebaly et al., 1977; Nylander et al., 1982). A matched pairs analysis of variance was performed to assess the degree of matching between the high-risk and community control families. There were no significant differences across groups on age of parents, age of target children, age of siblings, religion, family social prestige, the number of children living at home, or the birth position of the target child (see Table 3).

Procedure

After the initial contact, a meeting with the family was arranged to explain the project in greater detail and to screen the families more thoroughly for project criteria. Formal consent was also obtained at this time. Data collection at this time included a demographic

Table 3

Sociodemographic Characteristics of Alcoholic and
Community Control Families

	Alcoholic Families (n=9)	Community Control Families (n=9)	F- Value ¹
<u>Age in Years</u>			
-father's \bar{X}	31,78	28.89	1.59
S.D.	(3.90)	(5.17)	
-mother's \bar{X}	30,22	28.11	<1.00
S.D.	(4.16)	(4.70)	
<u>Religion</u>			
% Protestant			
-fathers	44%	33%	NA
-mothers	44%	44%	NA
% Catholic			
-fathers	33%	44%	NA
-mothers	44%	33%	NA
% no religion			
-fathers	22%	22%	NA
-mothers	11%	22%	NA
<u>Family Social Prestige^{2,3}</u>			
\bar{X}	29.72	27.03	<1.00
S.D.	(9.89)	(16.04)	
<u>Number of Children Currently Living At Home</u>			
\bar{X}	3.22	2.78	<1.00
S.D.	(2.11)	(1.72)	

Table 3 (cont'd.)

Age of Children
Living at Home (Years)

X	6.50	4.61	3.03
S.D.	(4.68)	(2.80)	

Age of Target Child (Years)

\bar{X}	4.11	4.07	<1.00
S.D.	1.17	1.28	

Birth Position
of Target Child

% 1st	22%	33%	NA
% 2nd	56%	45%	NA
% 3rd	22%	22%	NA

¹Based on univariate F - tests; all p's nonsignificant.

²Duncan TSE12 Socioeconomic Index, Stevens and Featherman (1980). These scores are based upon father's occupation except in one alcoholic family. This man had not worked for over 2 years as he was attempting to claim a work related physical disability. His wife's occupation was utilized, score 21.2.

³Two alcoholic fathers had been chronically unemployed. Phone contact with the Michigan Employment Security Commission established that "laborer" jobs² at the minimum wage are available in the Lansing area and that the job classification "laborer" is not currently on the surplus labor list. Both of these men had been working previously as semi-skilled laborers.

information form and a health history. The health history contained the Short Michigan Alcoholic Screening Test (SMAST; Selzer, 1975), and was used as the initial alcoholism screening inventory. The information on the SMAST insured that the potential alcoholic families did have men who met the alcoholic diagnostic criteria. In addition, the SMAST insured that the control families did not contain men who met the criteria for alcoholism.

A more complete assessment for alcoholism was made later in the study using a drinking and drug history. A statistical analysis of these data confirmed the classification of families as high-risk or control depending on the fathers' diagnosis for alcoholism (Table 4). The research diagnostic criteria used in establishing an alcoholic diagnosis are outlined in Table 5.

Measures

Each family that participated in the project completed many questionnaires, direct observation sessions and interviews (see Zucker, 1980; Zucker, et al., 1984). It is beyond the scope of this paper to review the methodology for the entire Michigan State University Vulnerability Study. The instruments included in this study are measures of life stress for adults and children and measures of behavioral and emotional symptomatology for both adults and children. Table 6 presents a summary of the specific measures used here. The

Table 4

Alcoholic Diagnosis, Drinking Problem Scores, and
Drinking Pattern Scores in Alcoholic Families
And Community Control Families

	Alcoholic Families (n=9)	Community Control Families (n=9)	χ^2 Value ₁
<u>% with diagnosis of alcoholic² during life of target child</u>			
-fathers			
% probable	22%	0%	<1.00
% probable + definite	100%	0%	37.98***
-mothers			
% probable	0%	11%	<1.00
% probable + definite	22%	11%	<1.00
-fathers and mothers			
% probable	0%	0%	<1.00
% probable + definite	22%	0%	<1.00
<u>Total number of drinking problems (ever)</u>			F Value ³
-fathers			
\bar{X}	9.89	2.11	18.16***
S.D.	(5.11)	(1.96)	
-mothers			
\bar{X}	1.67	.89	<1.00
S.D.	(2.91)	(1.29)	

Table 4 (cont'd.)

Mean SMAST⁴ Scores

-fathers	\bar{X}	7.56	.89	29.33***
	S.D.	(3.61)	(.78)	
-mothers	\bar{X}	1.22	.67	<1.00
	S.D.	(2.39)	(1.00)	

Mean Q-F-V⁵ index
past 6 months

-fathers	\bar{X}	2.00	2.44	<1.00
	S.D.	(1.32)	(1.13)	
-mothers	\bar{X}	(2.56)	(2.89)	<1.00
	S.D.	(1.51)	(1.36)	

¹ χ^2 computed with Yates correction for continuity.

²Using Feighner et al, (1972) Research Diagnostic Criteria and best estimate data from SMAST and Drinking and Drug History.

³Based on univariate f - tests.

⁴SMAST - Short form Michigan Alcohol Screening Test; data are best estimates from multiple information sources.

⁵Cahalan et al. (1969) Alcohol Consumption Index (Quantity-Frequency-Variability): 1=Heavy drinker; 2=Moderate drinker; 3=Light drinker; 4=Infrequent drinker; 5=Abstainer.

Table 5

Research Diagnostic Criteria (RDC)
for Diagnosis of Alcoholism

Probable diagnosis - when symptoms occur in two of the following groups as a result of alcohol consumption

Definite diagnosis - when symptoms occur in 3+ of the following groups as a result of alcohol consumption

Group 1: Any manifestations of alcohol withdrawal (i.e. convulsions, tremulousness, delirium); history of medical complications (i.e. cirrhosis, gastritis); alcoholic binges (48 hours+); or periods of amnesia (blackouts)

Group 2: Loss of control (i.e. morning drinking, repeated attempts to control drinking by self limit setting)

Group 3: Legal or work related difficulties (i.e. traffic offenses, absenteeism)

Group 4: Social or interpersonal problems (i.e. marital problems, feeling guilty about drinking, loss of friends)

Adapted from Feighner et al., 1972,

Table 6

Summary of Life Stress Study Measures

A. Life Stress Measures**1) Children**

The Family Events Questionnaire
by R. D. Coddington, 1972.

2) Adults

The Social Readjustment Rating Scale
by T. Holmes and R. Rahe, 1967.

B. Symptomatology Measures**1) Children**

a) The Child Behavior Checklist
by T. Achenbach and C. Edelbrock, 1981.

b) The Behavioral Style Questionnaire
by W. Carey and S. McDevitt, 1978.

2) Adults

a) The (Short) Beck Depression Inventory
by A. Beck, W. Rial, and K. Rickels, 1974.

b) The Hamilton Rating Scale for Depression
by M. Hamilton, 1960.

c) The Buss-Durkee Hostility Inventory
by A. Buss and A. Durkee, 1957.

d) The Anti-Social Behavior Scale
by R. Zucker and P. Barron, 1973.

e) The Health History Questionnaire
by J. Carpenter and D. Lester, 1980.

remaining text in the chapter describes each measure and its characteristics in greater detail. The complete project contact schedule may be found in Appendix 1.

Children's Measures:

A) Measurement of Children's Stressful Life Events

In order to test the hypotheses that children of high-risk families will experience more life stressors than controls and that parents' level of stress will be related to children's level of stress, a measure of children's life events was necessary. The Family Events Questionnaire is adapted from R. D. Coddington (1972) and records life events that have occurred in and might affect a child's life in the last year. Four separate scales were constructed by Coddington to cover four different age groups: preschool, elementary age, junior high age, senior high age. The instrument used in this study is designed for a preschool age group, is based on adult report, and contains 32 different life event items along with an opportunity to add any that the reporter feels are appropriate. In constructing his scales, Coddington had 131 teachers, 25 pediatricians, and 87 academically employed mental health workers rate each item on the magnitude of its affect on the social adjustment of children. In this way, Coddington could empirically determine how stressful one event was in respect to another. The raters were asked how much readjustment was needed for the child to accommodate a particular life event. No significant

difference in rank ordering of the items appeared and there was only a significant difference in "amount of readjustment needed" on nine of the 144 items through all four age groups.

Coddington then set out to determine how much psychological adjustment a child from a normal population could expect to go through in a year. Data were collected from one individual in each of 3620 families in Columbus, Ohio. Subjects who had a serious illness in the past year were excluded since the study was to determine the effects of life events on illness. The total N became 3526. When the number of life events and life change units were calculated, no differences appeared for race, sex, or social class. The only difference appeared on the age variable. Briefly, an increasing number of life events and life change units appear with increasing age, from preschool to elementary age to junior high to senior high age. Unfortunately, Coddington has not examined how comparable his four instruments are so this last conclusion is difficult to support fully. In addition, it is unclear whether or not each instrument is a truly comprehensive list of important life events for each particular age group. This last point may be particularly important in the study of alcoholic families if this type of family situation exposes children to idiosyncratic events.

Finally, based on the Brown and Harris study of 1978, adult recall of life events is fairly reliable over a one year period of time. In this study, the mother completes the life events inventory on the

target child. For each event checked off, the mother also answers four questions concerning the child's perception of these events. This second form is described more fully in the section on Adult Measures.

B) Measurement of Children's Symptomatology

Measures of children's emotional and behavioral problems were necessary to test two hypotheses: that children of high-risk families show more symptoms of impulsivity and aggression along with fewer peer relations, and parents' level of stress correlates with children's level of symptomatology. The Achenbach Child Behavior Checklist, and the Carey-McDevitt Behavioral Style Questionnaire were the two measures of behavioral and emotional symptomatology.

(1) Measurement of Behavior

Both parents completed the Child Behavior Checklist (CBCL; Achenbach and Edelbrock, 1981). The CBCL consists of 118 behavior problem items and 20 social competence items rated for their possible occurrence in the last year. The specific items were developed through a review of the literature and from case histories of 1,000 child psychiatric patients. Also, through factor analysis, separate profile forms of the CBCL have been developed and standardized for boys and girls at ages 4-5, 6-11, and 12-16. The Boys Aged 4-5 instrument used in this study provides scores on the following factors: social withdrawal, somatic complaints, depression, immaturity, sex problems, schizoid symptoms, aggression, delinquency. The first four factors are considered internalizing problems while the latter three factors are externalizing problems.

Regression analyses and analyses of covariance were calculated to determine any significant differences on the CBCL by race, SES, or gender. For race and behavior problems, 14 of 119 ANCOVAs were significant. The direction of these racial differences were almost equally divided; six reflecting higher scores for blacks and 8 higher scores for whites. However, "none of the racial differences revealed by the ANCOVAs accounted for more than 1% of the variance, which is considered to be minimal....," (p. 49; Achenbach et al., 1981). On social competence items, only one regression analysis was significant; the tendency for white 6 to 7 year old boys to score higher on activity level than their black counterparts. Again, the seven significant ANCOVAs accounted for less than 1% of the variance. It should also be noted that the significant results reported above could be due to chance because of their low incidence when considering the number of analyses that were done.

For SES, there were 13 significant regression analyses and 53 significant ANCOVAs. All but five of these reflected higher behavior problem scores for lower SES children. In addition upper SES children scored more favorably (higher) on the social competency items as evidenced by 18 out of 24 significant ANCOVAs. Yet again, the majority of these significant results accounted for less than 1% of the variance with the remaining results qualifying as small effects.

Gender differences were expected and found on over half of the items. In general, boys were significantly higher than girls on externalizing items and girls were significantly higher than boys on

internalizing items. Even so, the mean total behavior problems score did not differ by sex for the referred or nonreferred sample.

Inter-class correlation coefficients (R_I) were computed to assess test-retest and interparent reliability for each of the behavior and social competence items. At one week intervals, the test-retest reliability was .952 for behavior problems and .996 for social competence. Test-retest stability was also examined at three month intervals. Inter-class correlations for CBCLs from 12 mothers of nonreferred children equalled .838 for behavior problems and .974 for social competence.

Interparent reliability for mothers and fathers of 168 children in mental health settings was $R = .985$ and $.978$ for behavioral and social problems respectively.

(2) Measurement of Temperament

Both parents also completed the Behavioral Styles Questionnaire on the target child (BSQ; McDevitt and Carey, 1978). Having measures from each parent begins to give some idea of the similarity of perception in alcoholic vs. nonalcoholic families. The BSQ consists of 100 items designed to assess parents' ratings of temperament for 3-7 year old children. The content of the BSQ is based on the New York Longitudinal Study conceptualization of temperament. To assure internal consistency, a list of 135 items, agreed upon by at least five of eight judges familiar with the NYLS concepts, was given to 369 parents. Items were retained only if they were highly correlated ($\geq .30$) with

their assigned temperament categories. This resulted in the final 100 item questionnaire. Fifty-five of 350 parents who returned the questionnaire were asked to retake the BSQ one month later. The median test-retest reliability correlation is .81 with a range from .67 for the Threshold scale to .94 for the Approach scale. Alpha coefficients ranged from .47 to .80 with the total test alpha = .84.

Carey and McDevitt also explored the stability of temperament across ages. Their study compared temperament at four to six months with temperament at three to seven years and found a significant number of children showed consistency across time (Carey et al., 1978).

Parent Measures:

(A) Measurement of Stressful Life Events

A measurement of adult life events and the perception of those events was necessary to test the following hypotheses: adults of high-risk families experience more stress than their control counterparts, parents' level of stress will be related to children's level of stress and symptomatology, individual perceptions of stress mediate the adult stress-symptomatology relationship. The Holmes and Rahe Social Readjustment Rating Scale and the Life Events Questionnaire-Part B can provide the data to test these ideas.

(1) Each adult completed Holmes and Rahe's Social Readjustment Rating Scale (SRRS; Holmes and Rahe, 1967). The SRRS consists of 43 life event items derived from clinical experience. The amount of readjustment required for each item/event was determined by having a

sample of convenience, $N = 394$, proportionally rate the amount of social readjustment needed to accommodate to a life event. Correlation coefficients ranged from .82 to .975 between discrete groups in the sample for relative order and magnitude of the item means. The only correlation below .90 was between whites and blacks. Correlations by age, sex, marital status, generation, education, social class, and religion were all above .90 (Holmes and Rahe, 1967). A review of test-retest reliability and its relationship to item content has already been reviewed in the Literature Review section.

(2) Subjective perceptions of life events are measured by a four question form completed on each life event checked on the SRRS. This form has been labeled Life Events Questionnaire--Part B and is a modified form of questions used by Fontana et al. (1979). Each of the four questions are rated on a seven point scale and cover the subject's immediate reaction to the event (positive or negative), his adequacy of preparation for the event, his anticipation, and the degree of control he felt over the event.

(B) Measurement of Adult Symptomatology

Measures of adult symptomatology are required in order to test the hypothesis that adults in high-risk families show more symptoms of depression and hostility than adult controls.

(1) Measurement of Depression

(a) The Hamilton Rating Scale is completed by an interviewer on both adults after completion of the Diagnostic Interview Schedule, an

instrument being used in another part of the MSU Vulnerability Study (HRS; Hamilton, 1960). The HRS is based on phenomenology versus subjective feelings with behavioral and somatic features accounting for 50-80% of the total possible score. Affective or psychological symptoms account for the remaining percentage. The maximum possible score is 52 although scores higher than 35 are rare and scores around 30 indicate severe illness. There are a total of 17 items that are rated on 3- or 5-point scales. Despite different rating scales for items, a total score on all the items correlates .93 with the factor for general depression.

A factor analysis of the 17 items produced six factors although it is unlikely that the 5th and 6th factors have reached stability. Factor one is considered a general factor of depressive illness, measuring the severity of the symptoms. A high score in Factor two indicates symptoms of anxious depression where a low score indicates symptoms of a retarded depression. Factors 3 and 4 vary slightly for men and women. For men, Factor 3 (F3) contrasts insomnia, loss of appetite, and fatiguability against guilt, suicide, and loss of insight. Factor four (F4) for men contrasts hypochondriasis, loss of weight and of insight against a varied collection of symptoms. In women, F3 contrasts loss of libido, fatiguability, and depression against insomnia, agitation, delayed insomnia and hypochondriasis. F4 has loss of energy and appetite with hypochondriasis against guilt, suicide, depression, and agitation. Hamilton also compares differences on individual items for men and women (Hamilton, 1967).

Inter-rater reliabilities have ranged between .80 and .90 for the same interview (Hamilton, 1969). The inter-correlation between the HRS and the Beck Depression inventory (BDI) was 0.75 indicating some stability across measures. In this case, the BDI was not based on traditional self-ratings (Hamilton, 1969).

For this study, the Hamilton Rating Scale reliability was evaluated by way of a series of conjoint interviews conducted by the project interviewer (RAZ) and a psychiatrist who already had established reliability with the Hamilton and had used this instrument with several hundred patients. During these interviews each rater filled out the Hamilton separately. Neither interviewer's score deviated from the other by more than three points, and the Pearson r of the two raters' scores was 0.94.

(b) The (Short) Beck Depression Inventory (SBDI; Beck et al., 1961) is used as a self-report measure of depression in this study and is completed by both adults. The original BDI contains 21 items each containing four alternative statements graded in severity from 0 to 3. The items were derived from clinical experience in psychoanalytic psychotherapy with depressed patients. Therefore, each of the items describe specific behavioral manifestations of depression.

High internal consistency on the BDI is suggested by significant correlations between each of the 21 categories and the total depression score. Test-retest reliability was determined by comparing clinicians' ratings of depression with the BDI at two different times. Changes in clinicians' ratings tended to parallel changes on the BDI scores.

According to the researchers, this indicates a consistent relationship between the instrument and the patient's clinical state. Validity was examined by comparing psychiatrists interview ratings with the BDI across time intervals from two to five weeks. In 85% of the cases, the BDI predicted a change in the clinicians' depth of depression ratings. Though this inventory measures intensity of depression, it does not distinguish among standard diagnostic categories.

The SBDI consists of 13 of the original items. The 13 items were chosen by ranking all items according to the correlations between each individual item, the total score, and the clinicians' rating. The ranked items were then added one by one and again correlated with total scores and clinicians' ratings until cumulative correlations leveled off. This short form correlated .96 with the total score and .61 with the clinician's ratings of depression. Next, a cross-validation study was conducted on a sample of general practice patients with no suicide attempts, and a group of schizophrenic patients, $N = 431$. Each subject filled out both forms of the BDI and was interviewed by an experienced clinician. Correlations between the two forms ranged from .89 to .96. Correlations between the short form and the clinicians' ratings ranged from .55 to .67. All of these correlations were significant. Indications are that the short form is adequate in predictive power (Beck et al., 1974).

(2) Measurement of Hostility

The Buss-Durkee Hostility Inventory is another self-report measure that both parents complete (BDHI; Buss and Durkee, 1957). The inventory consists of 75 true-false items and was compiled by first defining subclasses of hostility that are commonly defined in everyday clinical situations. The specific items were constructed by the authors and borrowed from other inventories. After a group of subjects completed the inventory, items were retained if 1) they were answered in one direction by 15-85% of males or females in the sample, and, 2) each item had to correlate at $r > .40$ with the scale to which it belonged. Sixty-six of the remaining items measure hostility and 9 measure guilt.

The social desirability of this instrument was determined by having another sample rate how desirable each item was. Then, the original sample's response were used to determine the probability of endorsement for each item, $r = .27$ for men and $.30$ for women. Both of these correlations are small but significant.

Next, a factor analysis was run and produced two factors, an "emotional" or attitudinal component and a "motor" component that includes various aggressive behaviors. Factor one includes the subscales of assault, indirect aggression, irritability, and verbal aggression. Factor two includes the resentment and suspicion subscales (Buss et al., 1957; Buss et al., 1962).

Relationships between a psychiatrist's rating and other hostility measures were also examined. The psychiatrist's ratings were based on

the patient's history and a lengthy interview. Significant correlations appeared for the irritability, negativism, resentment, and verbal hostility scales. Also, the Elizur measure of hostile content, the Iowa Picture Interpretation Test (IPIT), a scrambled sentences task, and an operant conditioning task were all significantly correlated with the BDHI. The above instruments are all measures of aggressiveness. By examining the patterns of results, the authors conclude that patients' irritability and negativism before they are hospitalized is related to measures of aggressiveness (Buss et al., 1962).

(3) Measurement of Antisocial Behavior

The Antisocial Behavior Scale (Zucker & Noll, 1983) represents a modification of an earlier instrument, the Adolescent Antisocial Behavior Questionnaire (Zucker & Barron, 1973), that incorporates 18 of the items from this earlier inventory, as well as a larger number of social and antisocial items that are more suitable for an adult population. These items were drawn from a variety of sources, including antisocial items from the Diagnostic Interview Schedule (Robins, 1981) and from areas of behavior included in antisocial personality disorder, as described in the Research Diagnostic Criteria (Feighner, Robins, Guze, Woodruff, Winokur and Munoz, 1972). The final instrument (Appendix 4) is composed of 46 items that have been categorized by content into 9 subscales including parental defiance, sexual behavior, delinquent behavior, leaving the field, serious physical aggression, excitement and sensation seeking, job related anti-social behavior, school related anti-social behavior, and

trouble with the law. Each individual item is rated for the frequency the respondent engaged in that activity. Again, both parents complete this questionnaire.

Psychometric properties of the instrument appear adequate. Test-retest reliability over a four week interval with a college student population is 0.81: the coefficient alpha is 0.84 (Zucker & Noll, unpublished manuscript).

Due to the nature of these items, social desirability may be a factor in responses. That is, one might assume subjects would under report engaging in the listed activities because of their undesirable nature. To minimize this effect, the directions were phrased in an accepting manner with the expectation that many people engage in the following behaviors.

(4) Measurement of Health History

The final questionnaires used in this study are health history forms completed by both parents. This extensive self-administered history questionnaire was developed by the Rutgers Longitudinal Study (Carpenter and Lester, 1980) to assess health and illness status in fifteen areas: hospitalization history; current medication use; allergies; prior illnesses; skin and hair problems; eye, ear, nose and throat symptoms; heart and lung; G.I. tract; urinary tract; skeleton and joints; nervous system; alcohol and drug use; general health care patterns; diet and weight control; physical fitness activities. The wife's form, in addition, contains questions regarding the target child's birth and early developmental history.

Chapter 3

Results

Analysis:

The overall design of this study is a cross-sectional design with matched experimental and control group conditions. The high-risk and community control families were compared on measures of stressful life events and symptomatology. Group differences on these variables were determined by a matched pair analysis of variance (BMDP-2V) because of the careful matching of control and experimental families (Table 3). Matched pairs analyses of covariance controlling for chronological age of parents and/or children were also performed to determine if differences were significant with this factor controlled for. Results from the analysis of variance and covariance were quite similar.

Certain variables subjected to the above analysis showed large variances between groups. Levine's test for homogeneity of variance was used on any variables where group variances differed by a factor of ten or more. Few variables violated the assumption of homogeneity of variance; however, analysis of variance with logarithmic transformations were done when this assumption was violated. After controlling for the large number of computations, no significant results were obtained. Thus this analysis did not influence the final results.

Life Stress Measures:

In the first hypothesis it is predicted that parents and children of high-risk families will experience more life stressors than normal controls. The data gathered by the Holmes & Rahe SRRS and a slightly modified version of Coddington's life events measure¹ were used to test this idea. Various indices of life stress were derived from the above measures: number of life change units (LCU's) and frequency of life stressors in the last year, last six months, between six and twelve months ago, for husband and wife together; amount of LCU's in the areas of health, work, home and family, personal and social realm.

No significant differences were found with an analysis of covariance between high-risk and control adults on these variables. Nonetheless, all of the differences were in the predicted direction

¹Two life events were added to Coddington's scale, item numbers 10 and 19: "My child has been involved in a serious accident during the past year" and "One of my child's pets died during the past year". These two items are from the Life Events Questionnaire developed by N. Garmezy for Project Competence at the University of Minnesota. This measure was also adapted from Coddington and Holmes and Rahe. Life change unit values were determined for each event by selecting two events this author felt would be more and less stressful than each new event. The greater and lessor events were temporarily given LCU values of 10 and one respectively. Next, two independent licensed clinical psychologists assigned an LCU value between one and ten to the new events depending on how stressful they felt each event was in comparison to the already weighted events. The newly assigned values from the two raters were averaged for each event and the average was used in the computation of actual LCU values. Specifically, an equation was set up where the average value of the new event divided by the difference between temporary values of more & less stressful events equals the actual LCU value of the new event divided by the difference between actual LCU values of more & less stressful events.

with high-risk adults reporting more life stressors. Sign tests show that these trends are significant for amount of stress ($N=8$, $\chi^2 = 0$, $p<.004$) and by the category of stress ($N = 5$, $\chi^2 = 0$, $p<.03$). This same pattern of results is found when amount of stress is measured in six-month versus twelve-month intervals. Means and standard deviations for the above analysis may be found in Table 7.

There was a significant difference in life stressors reported for the children, with control children experiencing a higher frequency of stressors in the last six months when compared to the high-risk children, $F(1,8) = 9.26$, $p<.02$. Based on the frequency of occurrence for individual events (Appendix 2), the three events which account for most of the difference are: #3-My child has had at least one outstanding personal achievement during the past year, #6-There has been a change (up or down) in the family's financial status in the past year, and #16-My child has a new brother or sister who was born in the past year.

Adult Symptom Measures:

The second hypothesis states that alcoholic parents show more symptoms of both depression and hostility. No statistically significant differences were found between groups on either the Beck Depression Inventory or the Hamilton Rating Scale for depression (Tables 8A thru 8D). In addition, no significant differences appeared on the Buss-Durkee Hostility Inventory.

Table 7A

Amount of Life Stress Experienced by Adults in
Alcoholic and Community Control Families

					F-Value ¹		
					F-Parent	F-Risk	F-PxR
					(n=9)	(n=9)	
<u>Overall Life Stress Measures</u>							
Total life change units (LCU's) experienced in the last year - family	Mothers	\bar{X}	333.33	248.67	0.56	1.36	3.55 ⁺
		S.D.	(125.95)	(110.24)			
	Fathers	\bar{X}	347.33	246.89			
		S.D.	(138.56)	(107.43)			
Frequency of life events experienced in the last year - family	Mothers	\bar{X}	10.78	9.33	0.64	0.42	0.95
		S.D.	(4.44)	(3.71)			
	Fathers	\bar{X}	10.78	9.22			
		S.D.	(4.44)	(3.53)			
LCU's experienced by each adult in the last year	Mothers	\bar{X}	193.22	142.22	0.35	1.03	0.07
		S.D.	(84.43)	(88.42)			
	Fathers	\bar{X}	237.78	175.11			
		S.D.	(145.78)	(73.58)			
Frequency of life events experienced by each adult in the last year	Mothers	\bar{X}	6.22	5.33	0.71	0.35	0.08
		S.D.	(3.56)	(2.60)			
	Fathers	\bar{X}	7.89	6.67			
		S.D.	(4.54)	(2.24)			

Table 7B

Amount of Life Stress Experienced by Adults in
Alcoholic and Community Control Families

			Alcoholic Families (n=9)	Community Control Families (n=9)	F-Value ¹		
					F-Parent	F-Risk	F-PxR
<u>Homogeneous Content Scales of Life Stress</u>							
Health LCU's experienced by each adult in the last year	Mothers	\bar{X}	36.33	16.44	2.82	3.21	0.99
		S.D.	(36.35)	(18.59)			
	Fathers	\bar{X}	36.33	16.44			
		S.D.	(36.35)	(18.59)			
Work LCU's experienced by each adult in the last year	Mothers	\bar{X}	77.11	49.67	2.69	0.60	0.78
		S.D.	(62.52)	(46.98)			
	Fathers	\bar{X}	77.11	49.67			
		S.D.	(62.52)	(46.98)			
Financial LCU's experienced by each adult in the last year	Mothers	\bar{X}	44.00	29.00	1.90	2.04	0.19
		S.D.	(18.74)	(25.17)			
	Fathers	\bar{X}	44.00	29.00			
		S.D.	(18.74)	(25.17)			
Home & Family LCU's experi- enced by each adult in the last year	Mothers	\bar{X}	118.89	104.44	2.76	0.10	0.12
		S.D.	(62.15)	(69.46)			
	Fathers	\bar{X}	125.00	104.44			
		S.D.	(60.42)	(69.46)			
Personal & Social LCU's experienced by each adult in the last year	Mothers	\bar{X}	17.56	22.22	9.19*	1.50	1.86
		S.D.	(17.93)	(12.17)			
	Fathers	\bar{X}	80.33	45.55			
		S.D.	(61.10)	(24.36)			

*p<.05 + p<.10

¹F-value = main effect for parent and risk status and interaction from matched pairs analysis of covariance (BMDP-2V) with adult age as covariate.

Table 8A

Symptomatology Reported by Adults in
Alcoholic and Community Control Families

			Alcoholic Families (n=9)	Community Control Families (n=9)	F-Value ¹		
					F-Parent	F-Risk	F-PxR
<u>Depression</u>							
Current depression - Beck Depression Inventory	Mothers	\bar{X}	3.33	2.89	0.03	0.73	0.64
		S.D.	(3.46)	(2.20)			
	Fathers	\bar{X}	2.00	2.67			
		S.D.	(2.12)	(3.97)			
Current depression - Hamilton Rating Scale	Mothers	\bar{X}	6.56	5.44	0.95	1.62	0.01
		S.D.	(4.39)	(3.78)			
	Fathers	\bar{X}	7.44	5.67			
		S.D.	(4.61)	(5.24)			
Worst ever depression - Hamilton Rating Scale	Mothers	\bar{X}	18.67	19.44	0.16	1.46	0.15
		S.D.	(9.31)	(9.79)			
	Fathers	\bar{X}	14.89	12.67			
		S.D.	(11.73)	(10.61)			

Table 88

Symptomatology Reported by Adults in
Alcoholic and Community Control Families

			Alcoholic Families	Community Control Families	F-Value ¹		
			(n=9)	(n=9)	F-Parent	F-Risk	F-PxR
<u>Antisocial behaviors²</u>							
Total Anti-social Behavior	Mothers	\bar{X}	8.67	4.89	7.66*	11.08*	0.20
		S.D.	(4.30)	(2.20)			
	Fathers	\bar{X}	16.22	10.67			
		S.D.	(5.74)	(5.38)			
Parental Defiance	Mothers	\bar{X}	2.33	1.89	0.41	0.57	0.01
		S.D.	(1.41)	(1.05)			
	Fathers	\bar{X}	2.89	2.44			
		S.D.	(1.27)	(1.13)			
Sexual Behavior	Mothers	\bar{X}	0.11	0.11	1.04	0.80	1.36
		S.D.	(0.33)	(0.33)			
	Fathers	\bar{X}	0.67	0.33			
		S.D.	(0.87)	(0.71)			
Delinquent Behavior	Mothers	\bar{X}	0.89	0.67	3.23	10.74*	0.77
		S.D.	(0.78)	(0.50)			
	Fathers	\bar{X}	1.89	1.11			
		S.D.	(0.93)	(1.05)			
Leaving the field	Mothers	\bar{X}	0.89	0.44	0.32	8.32*	0.49
		S.D.	(0.78)	(0.53)			
	Fathers	\bar{X}	1.33	0.56			
		S.D.	(1.22)	(0.73)			
Serious Physical Aggression	Mothers	\bar{X}	1.22	0.33	3.51+	7.38*	0.00
		S.D.	(0.83)	(0.50)			
	Fathers	\bar{X}	2.33	1.56			
		S.D.	(1.41)	(1.42)			
Excitement And sensation Seeking	Mothers	\bar{X}	0.44	0.44	3.67+	0.01	0.09
		S.D.	(0.53)	(0.53)			
	Fathers	\bar{X}	1.33	1.33			
		S.D.	(0.87)	(0.71)			

Table 88 (cont'd.)

Excitement And sensation Seeking	Mothers	\bar{X}	0.44	0.44	3.67 ⁺	0.01	0.09
		S.D.	(0.53)	(0.53)			
	Fathers	\bar{X}	1.33	1.33			
		S.D.	(0.87)	(0.71)			
Job related Anti-social Behavior	Mothers	\bar{X}	0.89	0.11	1.19	12.58**	0.28
		S.D.	(0.78)	(0.50)			
	Fathers	\bar{X}	1.22	0.67			
		S.D.	(0.97)	(.083)			
School related Anti-social Behavior	Mothers	\bar{X}	1.22	0.78	4.94 ⁺	12.34**	0.44
		S.D.	(0.83)	(0.83)			
	Fathers	\bar{X}	3.00	2.00			
		S.D.	(1.73)	(1.41)			
Trouble with the law	Mothers	\bar{X}	0.89	0.22	21.62**	6.36*	0.62
		S.D.	(0.78)	(0.44)			
	Fathers	\bar{X}	2.44	1.22			
		S.D.	(1.59)	(1.09)			

Table 8C

Symptomatology Reported by Adults in
Alcoholic and Community Control Families

			Alcoholic Families	Community Control Families	F-Value ¹		
			(n=9)	(n=9)	F-Parent	F-Risk	F-PxR
<u>Hostility³</u>							
Assaultive Hostility	Mothers	\bar{X}	3.78	3.22	0.44	1.06	0.01
		S.D.	(2.64)	(2.05)			
	Fathers	\bar{X}	4.33	3.78			
		S.D.	(1.87)	(2.49)			
Indirect Hostility	Mothers	\bar{X}	4.89	5.00	2.14	0.01	0.06
		S.D.	(1.69)	(1.22)			
	Fathers	\bar{X}	4.33	4.11			
		S.D.	(1.80)	(1.76)			
Irritability	Mothers	\bar{X}	5.00	5.67	3.13	1.07	3.03
		S.D.	(2.60)	(2.12)			
	Fathers	\bar{X}	5.56	3.44			
		S.D.	(2.60)	(2.74)			
Negativism	Mothers	\bar{X}	1.89	1.67	0.23	1.40	0.09
		S.D.	(0.60)	(1.12)			
	Fathers	\bar{X}	2.67	2.00			
		S.D.	(1.66)	(1.12)			
Resentment	Mothers	\bar{X}	2.56	2.11	0.99	0.28	0.21
		S.D.	(2.30)	(2.03)			
	Fathers	\bar{X}	2.00	1.89			
		S.D.	(1.87)	(2.32)			
Suspicion	Mothers	\bar{X}	1.44	3.33	3.82 ⁺	1.74	12.93**
		S.D.	(0.53)	(2.00)			
	Fathers	\bar{X}	2.44	1.67			
		S.D.	(1.94)	(1.87)			
Verbal Hostility	Mothers	\bar{X}	6.11	4.67	2.37	3.94 ⁺	0.09
		S.D.	(2.57)	(1.58)			
	Fathers	\bar{X}	7.78	6.00			
		S.D.	(2.33)	(2.87)			
Guilt	Mothers	\bar{X}	3.22	3.33	0.26	0.17	0.02
		S.D.	(1.39)	(1.41)			
	Fathers	\bar{X}	3.67	3.11			
		S.D.	(2.12)	(1.96)			

Table 8D

Symptomatology Reported by Adults in
Alcoholic and Community Control Families

				Community Control Families	F-Value ¹		
		Alcoholic Families	(n=9)	(n=9)	F-Parent	F-Risk	F-PxR
<u>Physical health⁴</u>							
Number of general health symptoms	Mothers	\bar{X}	0.22	0.00	3.27	16.94**	0.04
		S.D.	(0.44)	(0.00)			
	Fathers	\bar{X}	0.78	0.78			
		S.D.	(0.67)	(0.83)			
Number of urinary tract problems	Mothers	\bar{X}	0.11	0.11	0.01	4.45 ⁺	0.12
		S.D.	(0.33)	(0.33)			
	Fathers	\bar{X}	0.67	0.44			
		S.D.	(1.19)	(0.73)			
Number of hours of sleep per night	Mothers	\bar{X}	2.56	2.44	0.13	24.98**	0.01
		S.D.	(0.53)	(0.53)			
	Fathers	\bar{X}	3.22	2.88			
		S.D.	(0.83)	(0.60)			

* $p < .05$ ** $p < .01$ + $p < .10$

¹This F-value is the main effect for parent and risk status and interaction computed by a matched pairs analysis of covariance (BMDP-2V) with age as covariate.

²All measures of anti-social behavior were derived from the number of items checked in each category on the Anti-Social Behavior Scale (ASB).

³All measures of hostility were derived from the Buss-Durkee Hostility Inventory (BDI).

⁴All measure of physical health were derived from the Health History Forms.

Nonetheless, when a sign test was performed on all of the symptom measures together, a significant difference was found with adults in alcoholic families exhibiting more symptomatology ($N = 22$, $X = 1$, $p < .001$). Statistically significant differences in means were found on the Anti-Social Behavior scale. High-risk adults reported significantly more overall antisocial behavior as well as more delinquent type behavior, leaving the field, serious physical aggression, job and school related antisocial behavior, and trouble with the law. Specific statistics may also be found in Tables 8A-8D.

Child Symptom Measures:

The third hypothesis predicts that children of alcoholics show more symptoms of impulsivity and aggression as well as fewer peer relations when compared to controls. No significant differences appeared between risk groups on either the Carey-McDivett child temperament questionnaire or on the Achenbach Child Behavior Checklist. Likewise, no significant trends appeared on any of these measures. That is, children of alcoholics apparently do not show higher levels of impulsivity and aggression or poorer peer relations; these results are summarized in Tables 9A and 9B.

The Relationship Between Life Stressors and Symptoms:

Hypothesis four predicts a positive relationship between parents' level of stress and children's level of stress and symptomatology. Past research has shown a link between stress and illness in an

Table 9A

Symptomatology Experienced by the Target Children of
Alcoholic and Community Control Families

				F-Value ¹		
		<u>Alcoholic Families</u>	<u>Community Control Families</u>	F-Parent	F-Risk	F-PxR
		(n=9)	(n=9)			
<u>The Carey-McDevitt Behavioral Style Questionnaire (BSQ)</u>						
Activity level T-score	Mothers	\bar{X} S.D.	2.67 (0.71)	2.44 (0.73)	0.37	0.00 1.16
	Fathers	\bar{X} S.D.	2.56 (0.73)	2.78 (0.83)		
Rhythmicity T-score	Mothers	\bar{X} S.D.	2.22 (0.83)	2.67 (0.87)	2.48	2.79 0.04
	Fathers	\bar{X} S.D.	2.56 (0.88)	3.11 (0.78)		
Approach/ Withdrawal T-score	Mothers	\bar{X} S.D.	2.33 (1.00)	2.89 (0.60)	4.26 ⁺	4.58 ⁺ 0.00
	Fathers	\bar{X} S.D.	1.78 (0.44)	2.33 (0.87)		
Adaptability T-score	Mothers	\bar{X} S.D.	2.67 (1.60)	2.44 (1.01)	0.39	0.27 0.20
	Fathers	\bar{X} S.D.	2.33 (0.71)	2.33 (0.87)		
Intensity T-score	Mothers	\bar{X} S.D.	2.56 (1.13)	2.22 (0.83)	3.57 ⁺	1.19 0.00
	Fathers	\bar{X} S.D.	2.00 (0.87)	1.67 (0.71)		

Table 9A (cont'd.)

Mood T-score	Mothers	\bar{X}	2.67	2.33	2.02	0.02	2.48
		S.D.	(1.22)	(0.86)			
	Fathers	\bar{X}	1.89	2.33			
		S.D.	(0.78)	(0.71)			
Response Threshold T-score	Mothers	\bar{X}	2.11	2.56	8.24*	0.01	2.80
		S.D.	(0.93)	(1.01)			
	Fathers	\bar{X}	1.78	2.44			
		S.D.	(0.83)	(0.53)			
Persistence T-score	Mothers	\bar{X}	2.78	2.44	0.03	0.54	0.44
		S.D.	(0.97)	(1.01)			
	Fathers	\bar{X}	2.67	2.67			
		S.D.	(1.22)	(0.87)			
Distractability T-score	Mothers	\bar{X}	2.78	2.56	0.80	0.91	0.00
		S.D.	(0.67)	(1.01)			
	Fathers	\bar{X}	2.67	2.33			
		S.D.	(0.50)	(0.71)			

Table 9B

Symptomatology Experienced by the Target Children of
Alcoholic and Community Control Families

				Alcoholic Families	Community Control Families	F-Value ¹		
				(n=9)	(n=9)	F-Parent	F-Risk	F-PxR
<u>The Achenbach Child Behavior Check List (CBCL)</u>								
Depression T-score	Mothers	\bar{X}	55.11	51.78	0.96	0.42	0.49	
		S.D.	(14.32)	(4.58)				
	Fathers	\bar{X}	51.11	50.67				
		S.D.	(7.69)	(9.10)				
Immaturity T-score	Mothers	\bar{X}	56.44	59.33	2.43	0.14	0.27	
		S.D.	(9.07)	(8.05)				
	Fathers	\bar{X}	53.89	53.67				
		S.D.	(7.18)	(9.19)				
Sex-related T-score	Mothers	\bar{X}	64.67	59.22	3.23	0.68	1.71	
		S.D.	(12.01)	(5.56)				
	Fathers	\bar{X}	58.11	60.44				
		S.D.	(4.11)	(8.44)				
Schizoid Symptoms T-score	Mothers	\bar{X}	59.33	59.44	2.94	0.16	0.12	
		S.D.	(6.40)	(5.25)				
	Fathers	\bar{X}	56.11	57.67				
		S.D.	(4.81)	(5.81)				
Aggression T-score	Mothers	\bar{X}	53.78	55.78	0.28	0.02	0.94	
		S.D.	(16.53)	(6.94)				
	Fathers	\bar{X}	54.22	51.33				
		S.D.	(7.45)	(10.56)				
Delinquency T-score	Mothers	\bar{X}	53.22	54.67	1.32	0.23	0.00	
		S.D.	(6.72)	(7.09)				
	Fathers	\bar{X}	54.89	56.00				
		S.D.	(4.70)	(6.95)				

Table 98 (cont'd.)

Other Problems	Mothers	\bar{X}	5.00	7.11	0.09	4.88 ⁺	0.14
		S.D.	(3.67)	(3.29)			
	Fathers	\bar{X}	5.22	6.44			
		S.D.	(2.64)	(3.84)			
Number of Total Problems	Mothers	\bar{X}	25.11	28.67	0.95	0.31	0.05
		S.D.	(16.50)	(8.01)			
	Fathers	\bar{X}	22.22	24.22			
		S.D.	(8.22)	(13.94)			
Internalizing Problems T-score	Mothers	\bar{X}	54.78	55.00	2.31	0.01	0.01
		S.D.	(12.47)	(6.08)			
	Fathers	\bar{X}	50.89	50.44			
		S.D.	(7.78)	(9.51)			
Externalizing Items T-score	Mothers	\bar{X}	51.22	54.67	0.13	0.09	0.93
		S.D.	(12.49)	(5.98)			
	Fathers	\bar{X}	52.56	51.33			
		S.D.	(5.80)	(8.94)			
Withdrawal T-score	Mothers	\bar{X}	55.11	56.67	0.27	0.00	0.51
		S.D.	(8.07)	(6.44)			
	Fathers	\bar{X}	55.67	54.11			
		S.D.	(7.57)	(8.88)			
Somatic Complaints T-score	Mothers	\bar{X}	59.67	64.11	2.00	0.96	1.70
		S.D.	(6.20)	(9.20)			
	Fathers	\bar{X}	58.11	57.67			
		S.D.	(6.84)	(3.50)			
Number of Friends	Mothers	\bar{X}	1.11	1.11	0.22	0.13	0.13
		S.D.	(0.60)	(0.60)			
	Fathers	\bar{X}	0.89	1.00			
		S.D.	(0.78)	(0.71)			
Amount of Time spent With friends	Mothers	\bar{X}	1.56	1.67	0.64	0.80	0.31
		S.D.	(0.73)	(0.71)			
	Fathers	\bar{X}	1.22	1.44			
		S.D.	(0.97)	(0.88)			
How well the Child gets Along with Friends	Mothers	\bar{X}	1.67	1.44	1.18	0.00	1.39
		S.D.	(0.50)	(0.53)			
	Fathers	\bar{X}	1.22	1.44			
		S.D.	(0.44)	(0.53)			

+ p<.10

* p<.05

¹This F-value is the main effect for parent and risk status and interaction computed by a matched pairs analysis of covariance with child's chronological age as covariate.

individual person. Current results support this finding (Appendix 3) and show a relationship between the stress experienced by a parent and the stress and symptomatology experienced by his/her child. In this study, the amount of stress in LCU's experienced by both parents over a one year period¹ was significantly correlated with the amount of stress in LCU's experienced by the child over the same year, $R(1,18) = .35, p < .02$. (See Table 10 for a breakdown of these results.) This same measure of family life stress was also significantly correlated, in the positive direction, with parent report measures of child activity level, distractability and response threshold level. These results are outlined in Table 11. The above relationships appear stronger between mother and child vs. father and child as well as appearing stronger for high-risk vs. control families. However, these differences are not yet conclusive and should be viewed with caution.

Individual Perceptions and the Stress-Symptom Relationship:

Hypothesis five predicts that individual perceptions moderate the stress-symptom relationship. When amount of stress was weighted by individual perceptions of the immediate reaction to the event, adequacy

¹After finding no differences between mothers' and fathers' individual levels of stress, this researcher decided to use the best estimate of stress experienced by the family as the stress measure in these analyses. This variable includes stressful events reported by one or both parents with no event counted more than once.

Table 10

The Relationship Between Family's Life Events
and Children's Life Events¹

Best estimate of total LCU's experienced by the family in the last year			
	Alcoholic Families (n=9)	Community Control Families (n=9)	Alcoholic and Control Families Combined (n=18)
Number of LCU's Experienced by the Target child in One year	.51 ⁺	.21	.32 ⁺
Number of events Experienced by the Target child in One year	.54 ⁺	.18	.25
Number of events Experienced by the Target child in The last six months	-.03	.49 ⁺	.07

+ p<.10

¹Pearson Product Moment correlations were computed between a family life events measure, total life change units from the adults in one year, and various measures of child life stress.

Table 11

The Relationship Between Adults' Life Events/Stressors
and Children's Symptomatology¹

		<u>Alcoholic Families</u>	<u>Community Control Families</u>
		(n=9)	(n=9)
		<u>Family Stress</u>	
Total number of behavior problems (CBCL)	Mothers	-0.01	0.03
	Fathers	-0.16	0.22
Number of other problems (CBCL)	Mothers	0.19	0.06
	Fathers	-0.23	0.36 ⁺
Activity level raw score (BSQ)	Mothers	0.03	0.61*
	Fathers	0.20	0.35 ⁺
Rhythmicity raw score (BSQ)	Mothers	-0.01	-0.31
	Fathers	0.47 ⁺	0.06
Approach/Withdrawal raw score (BSQ)	Mothers	-0.36 ⁺	-0.52 ⁺
	Fathers	0.16	-0.22
Adaptability raw score (BSQ)	Mothers	-0.23	-0.13
	Fathers	0.37 ⁺	0.13
Intensity raw score (BSQ)	Mothers	-0.25	-0.31
	Fathers	-0.32 ⁺	0.20
Mood raw score (BSQ)	Mothers	0.08	-0.12
	Fathers	0.02	0.22
Persistence raw score (BSQ)	Mothers	-0.33 ⁺	-0.23
	Fathers	-0.04	-0.38 ⁺
Distractability raw score (BSQ)	Mothers	0.58*	0.48 ⁺
	Fathers	-0.23	0.28
Response threshold raw score (BSQ)	Mothers	0.62*	0.41
	Fathers	-0.30	0.65*

+ p<.10 * p<.05

¹These results are from Pearson Product Moment correlations between various measures of child symptomatology and the best estimate of total LCU's experienced by the family in the past year.

of preparation, degree of anticipation, and amount of control they felt, analysis of covariance still failed to show significant differences in stress levels between high-risk and control groups (Table 12). To determine the mediating effect of individual perceptions on the stress-symptomatology relationship, partial correlations were computed between the weighted life stress scores and adult symptom scores with amount of life stress partialled out. Because of the number of correlations computed, the two significant correlations which appeared could be due to chance. However, the majority of partialled out correlations were larger than their zero-order counterparts, indicating that individual perceptions affect symptomatology independently of stress instead of in a linear fashion (Hunter, 1980).

Table 12

Amount of Life Stress
- Corrected by Subjective Weighting -
Among Alcoholic and Community Control Family Members

			Alcoholic Families (n=9)	Community Control Families (n=9)	F-Value ¹		
					F-Parent	F-Risk	F-PxR
<u>Subjective Perceptions</u>							
Immediate Reaction to The life event	Mothers	\bar{X}	810.22	722.67	0.17	0.07	0.00
		S.D.	(412.20)	(438.94)			
	Fathers	\bar{X}	877.89	898.00			
		S.D.	(625.64)	(439.36)			
Amount of Preparation For life event	Mothers	\bar{X}	885.11	698.33	0.19	0.44	0.01
		S.D.	(501.02)	(405.42)			
	Fathers	\bar{X}	936.00	809.44			
		S.D.	(520.79)	(394.84)			
Degree of Anticipation For life event	Mothers	\bar{X}	1004.00	709.78	0.01	0.66	0.03
		S.D.	(627.67)	(401.51)			
	Fathers	\bar{X}	909.33	804.44			
		S.D.	(520.57)	(387.37)			
Amount of Control felt Over life event	Mothers	\bar{X}	749.33	587.22	0.89	0.43	0.00
		S.D.	(336.04)	(328.67)			
	Fathers	\bar{X}	793.00	779.44			
		S.D.	(514.58)	(505.47)			

¹This F-value is the main effect for parent and risk status and interaction computed by a matched pairs analysis of covariance (BMDP-2V), with adult's age as covariate.

Chapter 4

Discussion

There is one immediate flaw in this research that was known at its inception. This is the small sample size which creates a high probability of type II error. Thus, except in cases of very strong effect, such a design is likely to yield a greater proportion of nonsignificant affects even when true differences may exist in the population being studied. There is a fair amount of evidence that suggests this is an issue for the current data set and it needs to be kept in mind in dealing with all that follows. It also needs to be clear at the outset that this problem was known at the beginning and that data are currently being collected to enlarge the sample size and rectify the problem. The careful matching of the high-risk and control groups on background characteristics was done with this in mind; controlling part of the error variance helps compensate for the small sample size. Nonetheless, in most respects, the current report needs to be regarded as a pilot study rather than as a definitive last word.

Life Stress Findings:

Adults: The hypothesis that adult alcoholic family members experience more life stressors than their controls received partial support from these data. This support comes from a significant sign

test for direction of effect, and so must be regarded as a tentative conclusion. More specifically, the data suggest that high-risk adults are experiencing greater amounts of stress in general; more specifically, more stress appeared in the health, work, financial, family, and personal/social realms. It seems that all areas of life for the alcoholic family are more stressed. If this is in fact a replicable effect, a next step in the research would be to investigate the causal relationship between elements in the alcoholic's life and alcoholic consumption that connect the alcoholism to the stress.

Children: The data on children's life stressors present a slightly different picture. The one significant difference in the measurement of the children's level of stress was in the opposite direction to the one predicted: parents reported that control children had experienced more stressors than high-risk children in the last six months. Presuming this is a real difference, a look at the three specific events which account for most of the variance in this factor may help to explain it. The three events (having an outstanding personal achievement, a change in the family's financial status, gaining a new brother or sister) may be seen as positive changes, indicative of a supportive family environment. The alcoholic family would probably not have as supportive an atmosphere which could facilitate this type of positive change or stress. In regard to level of stress, Hurme has noted that a certain amount of stress can act as a developmental

task. If this is the case, the higher level of stress reported for control children and the higher level of cognitive development reported on this same subsample by Noll (1983) are compatible results.

Symptom Findings:

Adults: The hypothesis that alcoholic family members exhibit more symptomatology also received partial support from these data. The four main areas of adult symptomatology measured include depression, anti-social behavior, hostility, and physical health. Significant differences between alcoholic and nonalcoholic adults were found, in the predicted direction, in the areas of antisocial behavior and health. Because of this, one could assume that these are extremely robust effects. On another level, a significant trend is also present when the various symptom measures are viewed together. In sum, it appears that higher levels of pathology in high-risk adults are real differences. Then, one again needs to question the role of alcoholism in this effect.

Children: The hypothesis that high-risk children would exhibit more symptoms of impulsivity, aggressiveness, and poorer peer relations than their controls did not receive support from these data. This is unexpected considering past research has shown behavioral problems in children of alcoholics. There are a number of potential measurement and methodological problems that may be responsible for these results

and will be reviewed later. On the other hand, it is possible that this is a real effect and no behavioral or temperament differences exist between these two groups of children at this age.

Stress-Illness Findings:

The hypothesized link between stress and symptomatology also found support in these data. The significant positive relationship between stress and symptoms in adults was expected and helped to verify the findings of other researchers. However, the hypothesis that an individual's subjective perception of the stress experience would moderate this relationship did not receive support. In fact, this variable may not be a factor in the stress-illness interaction; conversely, subjective perception may be confounded by poor recall and/or cognitive dissonance -- the need to remember unpleasant past events as positive.

This stress-illness connection is not as obvious when one looks across parent and child. Because this idea is a relatively new one, this study first looked at the relationship between parents' level of stress and children's level of stress. A significant and positive relationship was expected and found. In addition, this connection appears stronger in the alcoholic families as compared to their controls (Table 10). This may indicate that children's experiences in high-risk families are more influenced by the experiences of their parents. The relationship between parent stress and child symptomatology points to a similar conclusion. Again, the link is a

positive one and appears stronger in the high-risk families (Table 11). Yet, the stress-illness link is only significant for certain types of symptom behaviors: activity level, distractability, response threshold. These symptoms all have a common theme relating to behavior; they are connected to concepts like impulsivity and poor attention span. More simply, the results indicate that high levels of family stress are in some way related to having impulsive children. The data need to be considered as tentative until they are replicated.

A Theoretical Framework:

The picture of the alcoholic family emerging from these data is a complex and, as yet incomplete, one. The adults in these families are experiencing amounts of stress which are potentially higher than the average. Higher amounts of stress are coexisting with higher amounts of symptomatology, most obviously aggression and hostility, and depression in lesser amounts. It is also clear that stress and illness are influencing each other in these high-risk adults.

Curiously enough, the above picture is not reproduced when the children in the alcoholic families are studied. At this point, the target children are not reported as experiencing more stress or pathology than their nonalcoholic counterparts and the link between stress and symptoms in children is not as strong as it is in the adults. Because adults, and parents in particular, are such a major part of children's lives in the preschool years, it makes sense to

investigate the interaction of stress and illness across parents and children. Again, this interaction is significant and complex. Higher amounts of parental stress are related to higher amounts of stress in children. In addition, higher amounts of parental stress are related to higher levels of activity/impulsivity in children. These results reinforce the idea that there is an influential bond between parents and children and might shed some light on the nature of this bond. More specifically, there could be an enmeshed character to it; whatever affects the parent affects the child too. And, if this bond is indeed stronger in alcoholic versus nonalcoholic families, the alcoholic family is the more enmeshed family.

Following this line of reasoning, there may be some other characteristics of the alcoholic family that prevent them from being more autonomous. For example, poor coping skills and low levels of social support may cause an individual to turn to his/her child for support. In turn, in alcoholic families it may be more difficult for the child to resist this dependency of his parent. This might happen for a variety of reasons: the child himself has strong dependency needs, is depressed, has limited cognitive skills that impair his ability to develop the concept of independence. Data from another section of the larger MSU Family Study suggest that dependency and depression are stronger factors in high-risk children and support the hypothesis that high-risk children are behind control children in their level of cognitive development (Noll, 1983). Although there are

current data to support the above model, it is only a model until more research is done in this area.

Methodological Issues:

The problems of a small sample and type II error were mentioned at the outset of this discussion. Yet, with a small sample there is also the possibility of a biased sample through selective recruitment, selective participation, a selective population, or some other unknown idiosyncratic characteristics of the sample. The potential bias in recruitment was eliminated by systematically going door to door in search of control families and going straight down the list of potential high-risk families. Selective participation can also be ruled out because of the 100% participation rate of alcoholic families and the participation of ten out of eleven control families approached. The population is restricted given that the sample was selected from court records in a midwestern state and consisted of subjects who were principally blue-collar semi-skilled workers. In these respects, the results may not be generalizable to other social statuses, or conceivably to other geographic areas.

Another potential problem is a bias in the data which are based on adult self-report. While it is true that the present data set is based heavily on self-report instruments, it is also true that both alcoholic and control families engaged in this task. Thus, although the data may not be as reflective of the true behavioral state of affairs in these families, it is reasonable, nonetheless, to believe that the

differences we found were in fact true perceived differences between the two groups.

Measurement Issues:

In trying to understand the pattern of results in this data set, the actual measures used must be considered. Our literature review on stress raised the question "What about a specific event makes it stressful?". No firm conclusion was reached so this researcher derived numerous types of variables from the Social Readjustment Rating Scale (SRRS) and the Coddington Life Events Questionnaire. Stress was then measured, across different time periods, by life change units, frequency of occurrence, type of event, and subjective perceptions. None of these methods of measurement made a difference in the end result, for this data set. This may be because the differences found in this sample are real but are hindered by sample size etc. or that the measure of major life events does not touch what is stressful for these families. If this latter point is correct, the issue is a conceptual one and not a measurement one. For this reason, a measure of more frequent/common day to day stressors may be more useful in a study such as this. This is planned in future data collection on the project.

The target children's age adds another problem to the measurement process. Specifically, the Achenbach Child Behavior Checklist (CBCL) was not designed for use with children under the age of four years. This makes it an instrument of lesser reliability and unestablished

validity for use with the present sample. Also, while there may be no behavioral or temperament differences between high-risk and control children between the ages of 2 1/2 to 6 years of age, differences may appear at later ages: as the high-risk children grow older, they will be exposed to more aggression and confusion in their families. In addition, there may be sleeper effects--what children are exposed to now may not show up as behavioral consequences until later. This line of reasoning is compatible with other research findings in that the behavior problems reported in the earlier literature appeared in children who were ten years of age and older.

Future Directions:

The next phase of this project is designed to address a number of issues raised in this chapter. First, the sample size is currently being increased in order to reduce the possibility of type II error. As mentioned earlier, a measure of life stress that taps more frequent and common events will be utilized as a way of approaching the issue of what is stressful for these families. In addition, measures of adult coping skills and social support networks will be added. Finally, the California Child Q-sort will be completed by two independent raters in order to have some observational data on the children's behavior and temperament. With these changes, it will be possible to further clarify differences in stress and symptomatology between alcoholic and nonalcoholic families, and to expand the model of the stress-symptom relationship.

APPENDICES

Appendix 1

CONTACT AND DATA COLLECTION SCHEDULE

- 1 B/N/T sends initial contact/introduction letter from RAZ, or else makes phone contact (or home visit) directly.
- 2 Phone contact made by core staff (B/N/T) and appointment is set up for initial contact-explanation interview (respondents' home).
- 3A1 Home visit by B/N/T with both parents (child briefly accessible) to explain study, obtain consent, and collect initial background information to allow for quick screening for family appropriateness. If family agrees to take part, the following measures are obtained at this time: (1) child(ren)'s verbal consent to participate; (2) signed project consent forms; (3) signed video consent form, if applicable; (4) Health Questionnaires -Hu & Wi-includes SMAST related items and birth and early developmental history on child.; (5) Demographic Background Questionnaire (Hu & Wi).

Time: Approx. 45' to 1:30; if time not available, E may only be able to obtain consent forms and part of Health Questionnaires. These are of higher priority than the demographic information. If all questionnaires are not completed at this time, schedule the ones still to be done for session 3B.

- 3A2 E completes "First Visit Rating Form" following visit 3A.
- 3B Follow-up visit for medical history and Health Questionnaire and Demographic information if needed.
- 4A Participant observation and video taping if family agrees (and this is applicable); if family refuses or this procedure is not applicable, then go to step 5. Otherwise, step 5 begins when initial observations and video taping are completed.
- 4B If participant observation, Caldwell HOME is done by JB after first visit. (Otherwise see step 8).
- 5A Hu & Wi - Questionnaire session (done by CW) Administer (1) Beck Questionnaire; (2) Leisure time Inventory ASB (3) Drinking and Drug History; (4) Achenbach Child Behavior Checklist; (5) Carey and McDevitt Behavioral Style Questionnaire; (6) Work Satisfaction Inventory (administer only to respondents who work full or part time outside the home).

Time: Approx. 2:00 to 2:30.

Appendix 1 (cont'd)

5B Child and RBN: If possible, done simultaneously with (5A) Home visit to administer Yale Developmental Battery.

6A Mo & Child and DT: Trip to MSU; Lab visit for structured play evaluation and behavioral ratings (done by 2 raters).

Time: Approx. 1:00.

6A1 Resistance to temptation task.

6B California Q-sort on child done by DT immediately following observation session.

7A Mo & Child - Home visit. Cognitive assessment on child for alcohol concepts, impulsivity, etc. administered by RBN. Mo completes Coddington while child competes cognitive assessment.

7B Calif. Q-sort on child done by RBN immediately following session 7A.

8 Mo and Child - Home visit to obtain Caldwell HOME. (Done by DT or JB: Only necessary if step 4B not applicable).

9 Home participant observation visit - JB and family; only done if 8 not applicable.

10A Questionnaire and Interview Session #2 - At home; Hu and Wi and CW and RAZ.

Questionnaires: Benjamin Interpersonal Rating Scales (Parts A, B, C, done in order of: Self Description; Spouse Description; Spouse's Description of Self; Life Events Questionnaire, Part A; Moos Family Environment Scale; Life Events Questionnaire, Part B; Buss-Durkee Questionnaire. (N.B. All of these questionnaires to be administered to Wi with CW while RAZ does Diagnostic Interview Schedule with Hu. When DIS is completed, the sequence is reversed and the Wi is interviewed while Hu completes questionnaires. (Questions administered during the Diagnostic Interview also allow for the completion of (1) Hamilton Rating Scale for Depression; (2) Temperament Rating Form; (3) WAIS Information and Digit Symbol subtests; and (4) Genogram.)

Time: Approx. 2:30 to 3:00; if family is too fatigued this session is spread over two adjacent days.

10B RAZ does Calif. Q-sort on Hu and Wi immediately after the interview.

Appendix 1 (cont'd)

11 Final home visit done on families where participant observation took place; also complete genogram with family.

12A Payment and feedback answering and ending session; also have Hu and Wi fill out (1) recontact forms, and if necessary; (2) genogram; (3) provide information on potential neighborhood control families; (4) leave taking. (Core staff).

Time: Approx. 1:00.

12B For families with participant observation, CW does Calif. Q-sort on Hu and Wi immediately following session.

Appendix 2

Table 13A

Individual Frequencies of Life Events
as Reported by Adults on the Social Readjustment Rating Scale

	<u>High-Risk Families</u>						<u>Control Families</u>					
	<u>Mothers (N=9)</u>			<u>Fathers (N=9)</u>			<u>Mothers (N=9)</u>			<u>Fathers (N=9)</u>		
Time*:	<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>
Item #												
1	2	0	0	1	0	1	0	0	2	2	0	0
2	0	0	6	2	4	0	0	0	0	0	0	0
3	1	0	4	3	1	1	3	0	2	2	0	3
4	0	1	0	0	0	1	1	1	0	0	1	1
5	1	0	3	3	1	0	1	1	0	0	0	2
6												
7	0	1	0	0	0	1	0	0	1	0	1	0
8	3	0	1	2	1	1	1	0	2	1	1	1
9	0	0	3	2	1	0	1	0	4	4	1	0
10	0	4	0	1	1	2	1	2	0	0	2	1
11	1	0	1	1	0	1	1	1	2	3	0	1
12	0	1	1	0	1	1	0	0	1	1	0	0
13	1	0	1	1	0	1	1	2	0	0	0	3
14	1	4	2	3	1	3	0	2	1	0	1	2
15	0	4	0	1	2	1	1	2	0	1	1	1
16	1	2	1	2	0	2	1	0	0	1	0	0
17	1	2	1	1	1	2	0	0	1	1	0	0
18	1	0	1	2	0	0	1	0	2	3	0	0
19	0	1	1	1	0	1	2	0	1	0	1	2
20	1	1	3	3	0	2	0	0	4	4	0	0
21	0	1	0	0	1	0	1	3	0	1	1	2
22	2	1	2	4	0	1	1	0	3	4	0	0
23	0	2	0	1	1	0	0	0	0	2	0	0
24	1	0	1	1	1	0	1	1	0	1	0	1
25	1	2	1	2	0	2	1	1	3	1	2	2
26	1	1	1	2	0	1	0	0	0	0	0	0
27	2	0	1	2	1	0	1	0	1	1	0	1
28	0	0	3	2	1	0	0	0	1	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	1	1	2	2	0	1	3	2	1	3	2	0
31	3	2	0	2	2	1	2	4	1	1	6	0

*1 = Zero to six months ago
 2 = Six to twelve months ago
 3 = Checked by spouse but not individual

Appendix 2 (cont'd.)

Table 13B

Individual Frequencies of Life Events
as Reported for Children
On the Coddington Life Events Questionnaire

Time*: Item #	High-Risk Families (N=9)			Control Families (N=9)		
	<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>
1	1	0		1	1	
2	0	0		0	0	
3	0	1	2	5	2	
4	1	0		1	0	
5	1	0	1	1	1	
6	1	0	1	4	1	
7	0	1	1	0	0	
8	0	1		0	1	
9	0	0		0	1	
10	1	1	1	1	2	
11	0	0	1	1	0	
12	0	1		0	0	
13	1	1	1	1	0	
14	0	0		1	0	
15	1	0	1	1	0	
16	0	0		0	4	
17	0	1	2	2	1	
18	0	0	1	0	0	

*1 = Zero to six months ago
 2 = Six to twelve months ago
 3 = Not specified

Appendix 3

Table 14

Symptom:	Best Estimate of Total LCU's Experienced by the Family in the Last Twelve Months		
	Wife (N=18)	Husband (N=18)	Wife + Husband (N=36)
Depression:			
Current - Beck	0.20	-0.12	0.03
Current - Hamilton	0.29	0.34+	0.31*
Worst ever - Hamilton	0.67**	0.45*	0.55**
Hostility:			
Assault	0.37+	0.16	0.27+
Indirect	0.16	0.03	0.07
Irritability	0.16	0.27	0.22+
Negativism	0.08	0.31+	0.22+
Resentment	0.07	0.08	0.08
Suspicion	0.00	0.38+	0.20
Verbal	0.47*	0.06	0.23+
Guilt	-0.22	0.16	0.00
Anti-social behavior:			
Total anti-social behavior	0.55**	0.32+	0.34*
Delinquent role	0.05	0.18	0.13
Leaving the field	0.19	0.41	0.32*
Serious physical aggression	0.70**	0.26	0.37*
Job related	0.57**	0.16	0.34*
School related	0.24	0.17	0.17
Trouble with the law	0.73**	0.22	0.33*
Health:			
No. of illnesses	0.16	0.22	0.18
No. of other general symptoms	0.14	-0.24	-0.07
No. of eye, ear, nose, throat problems	0.03	-0.14	-0.07
No. of urinary tract problems	-0.16	-0.31+	-0.22+
Hours of sleep per night	-0.24	-0.04	-0.15

+ p<.10 *<.05 **p<.01

Appendix 4

The Antisocial Behavior Checklist

Many of us have had adventures during our lives...times that were exciting and carefree, even though they may have been a bit impulsive or happy-go-lucky. Please read each of the following items. Indicate (with a check) if you have ever done any of the following activities and how often.

N E V E R	R A R E L Y	S O M E T I M E S	O F T E N	NEVER - you have never done this
				RARELY - done once or twice in your life
				SOMETIMES - done three (3) to nine (9) times in your life
				OFTEN - done more than ten (10) times in your life
				<ol style="list-style-type: none"> 1. Skipped school without a legitimate excuse for more than 5 days in one school year. 2. Been suspended or expelled from school for fighting. 3. Been suspended or expelled from school for reasons other than fighting. 4. Lied to a teacher or principal. 5. Cursed at a teacher or principal (to their face)? 6. Hit a teacher or principal. 7. Repeated a grade in school. 8. Taken part in a gang fight. 9. "Beaten up" another person. 10. Broken street lights, car windows, or car antennae just for the fun of it. 11. Gone for a ride in a car someone else stole. 12. Teased or killed an animal (like a dog or cat) just for the fun of it. 13. Defied your parent's authority (to their face). 14. Hit your parents. 15. Cursed at your parents (to their face). 16. Stayed out overnight without your parent's permission. 17. Run away from home for more than 24 hours. 18. Lied to your parents. 19. Snatched a woman's purse. 20. Rolled drunks just for the fun of it.

Appendix 4 (cont'd)

N E V E R	R A R E L Y	S O M E T I M E S	O F T E N	<p>NEVER - you have never done this</p> <p>RARELY - done once or twice in your life</p> <p>SOMETIMES - done three (3) to nine (9) times in your life</p> <p>OFTEN - done more than ten (10) times in your life</p>
				<p>21. Shoplifted merchandise valued over \$25.</p> <p>22. Shoplifted merchandise valued under \$25.</p> <p>23. Received a speeding ticket.</p> <p>24. Been questioned by the police.</p> <p>25. Taken part in a robbery.</p> <p>26. Taken part in a robbery involving physical force or a weapon.</p> <p>27. Been arrested for a felony.</p> <p>28. Resisted arrest.</p> <p>29. Been arrested for any other nontraffic police offenses (except fighting or a felony).</p> <p>30. Been convicted of any nontraffic police offense.</p> <p>31. Defaulted on a debt.</p> <p>32. Passed bad checks for the fun of it.</p> <p>33. Ever used an alias?</p> <p>34. Gone AWOL from the military.</p> <p>35. Received a bad conduct or undesirable discharge from the military.</p> <p>36. Performed sexual acts for money.</p> <p>37. Engaged in homosexual acts.</p> <p>38. Had intercourse with more than one person in a single day.</p> <p>39. "Fooled around" with other women/men after you were married.</p> <p>40. Hit your husband/wife during an argument.</p> <p>41. Lied to your spouse.</p> <p>42. Spent six months without any job or permanent home.</p> <p>43. Been fired for excessive absenteeism.</p> <p>44. Been fired for poor job performance (except absenteeism).</p> <p>45. Changed jobs more than 3 times in one year.</p> <p>46. Lied to your boss.</p>

Thank you for your cooperation.

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