THE EFFECTS OF ONTOGENIC, MICROSYSTEM AND MESOSYSTEM VARIABLES ON THE OUTCOME OF CHILD ABUSE

by

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Abstract

The purpose of this investigation was to empirically test an ecological model of child abuse. The orientation of this model is to address the contexts in which individuals function. The three contexts pivotal to the current investigation are the ontogenic system, representing personality traits and the quality of care received by the mother in her childhood; the microsystem, representing the dyadic relationships between the mother and her child, and the mother and the rest of her family; the microsystem, representing the relationship between the mother and her social network as well as the impact of life stress.

A prospective method of investigation was used. One hundred seven women were selected from a larger pool of women previously identified as high risk. Half of these women were clearly abusing their children while the other half were providing adequate care. Discriminant function analyses were employed to determine the rates of prediction into abusing and nonabusing groups, first for individual systems, then for all three systems simultaneously. The hypotheses predicted a higher percentage of correct classification when all systems were considered together, rather than individually. These hypotheses were supported. An 86% rate of correct classification was obtained when ontogenic, microsystem and mesosystem variables were entered together. This is in contrast to a 76% rate of correct classification for ontogenic, 69% for microsystem and
76% for the mesosystem. The most powerful predictors were the quality of care the mother received in her own childhood, family continuity and life stress.

Results from additional descriptive analyses suggest that women who abuse their children are not more socially isolated than those who do not abuse, nor are they more impulsive or hostile. Stress appeared to be an important variable only for those women who had, themselves, been victims of abuse.

The results of this investigation suggest that multivariate methods are a fruitful direction for future inquiry into abuse etiology.
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CHAPTER 1
INTRODUCTION

Some of them will grow up to correctional institutions, to mental hospitals, some to drifting and economic dependence, some to create families like those they knew as children. They are the children of neglect and abuse.

(Young, 1964:2)

Child abuse is not a new problem. Those that have traced the history of parent-child relationships provide ample evidence for this (Collins, 1975; ten Bensel, 1976). What has changed most in the past 15 years is the level of awareness by concerned professionals, and an increased recognition of the growing need to directly confront maladaptive parenting and its effects.

There is little doubt that the number of reported cases of child abuse has increased since the early 1960's. Recent estimates of the incidence rate range from 600,000 (Antler, 1978) to 1.5 million cases per year in the United States alone (Gelles, 1978). It is unclear however, whether incidence itself is on the rise, or if increased reporting is due to a series of political and legislative changes; foremost among these are the design and implementation of mandatory reporting procedures of all cases of suspected abuse and neglect. Even with recent legislation, accurate projections are frequently confounded by differences in the definition of abuse, individuality of reporting styles, and enforcement of the mandate.

The current trend in awareness is due in large part to Kempe's exposition of the problem in 1962 (Kempe, Silverman,
Steele, Droegmueller & Henry, 1962). Initial observations, although clinically based and anecdotally reported, served as the crucial premier etage for later theory building and subsequent hypothesis testing. The discovery of patterns of similarities among abusing parents was important to the development of a multiple based etiology. As investigators began to recognize a series of traits and characteristics typical of the abusive parent, the notion that abuse was caused by a single factor (such as personality dysfunction or poverty) began to shift, and a new emphasis was placed on the investigation of combinations of factors that seemed likely to influence outcome.

**Statement of the Problem**

There are three basic models of abuse etiology: psychiatric, sociological, and social-interactional. Belsky (1980), however, has suggested that these models be integrated and framed within the context of Bronfenbrenner's (1979) model of ecological development.

Defining the problem for the current investigation is done in four steps. First, each of the three traditional approaches is briefly reviewed. Second, Bronfenbrenner's (1979) model is discussed. Next, Belsky's (1980) model is elucidated and discussed in relation to the three traditional views. Finally, an adaptation of the Belsky model, designed by this author, is presented. It is this final model that serves as the theoretical basis for the present investigation.

**Psychiatric.** Stemming from the observations of Kempe
and his colleagues (Kempe et. al., 1962), psychiatric notions of child abuse originally grew from a psychodynamic model of functioning. This theoretical base, although modified in recent years by some proponents, viewed child abuse as the direct result of parental personality dysfunction. The aggressive drive of the parent hypothetically originated in early childhood experiences. The inadequacy of these early experiences was most often typified by unmet dependency needs and a lack of emotional security. In adulthood then, the negative effects of these early experiences triggered frustration and hostility which were subsequently displaced onto the parent's own infant. These feelings of anger rendered the parent incapable of meeting the same needs for emotional security, comfort and physical care, thus setting the stage for another cycle and generation of abuse (Steele and Pollack, 1968).

So firm was the belief that abuse was the result of a defective personality structure, Boisvert (1972) constructed a typology for classifying abusive parents on the basis of personality characteristics. Six general categories were established including the psychotic, inadequate, passive-aggressive and sadistic types whose members were generally classified as 'uncontrolled in their battering'. Parents who were 'controlled' in their abuse were described as exhibiting 'displacement of aggression', or were regarded as 'cold disciplinarians' incapable of responding to a child's need for love and affection in a warm and appropriate manner. The major problem with typologies such as these is the
disregard for characteristics of both the child and the environment, and the interactive forces unique to each situation.

Despite the fact that personality deficits seemed to be evident among parents who abused their children, the specific types of psychiatric morbidity and incidence rates were not highly reliable. In an intensive study tracking 60 families over a five and one half year period, most abusers were said to have exhibited intrapsychic disturbances severe enough to warrant therapeutic intervention regardless of the presenting problem of maltreatment (Steele and Pollack, 1968). However, a subsequent re-evaluation of those data indicated that less than 10% of all those persons referred for abuse could be similarly classified (Steele, 1976). In a more recent study of parents who commit acts of severe abuse however, 76% were diagnosed with either a personality or neurotic disorder while 30% gave histories of suicidal attempts or gestures. Thirty-four percent had been psychiatric inpatients and 30% were classified as borderline or mentally subnormal (Baldwin and Oliver, 1979). Coupling these findings with Steele's estimate of psychopathology among abusing parents may initially appear paradoxic. However, Baldwin and Oliver's study is limited to cases of severe abuse, suggesting that the degree of parental pathology may be directly related to the severity of treatment to which the child is subjected. Given the limited knowledge base at this point, findings such as these do not provide an adequate basis for the development of an entire etiological
They do, however, yield enough evidence to merit continued investigation of personality factors as a component among contributing influences. To postulate that dysfunctional personality structures alone account for abusive situations fails to acknowledge the complexity of outside influences as well as individual response patterns.

**Sociological.** Proponents of the sociological model of abuse address the problem on one of two distinct levels, here referred to as the global level and the specific level. A global level of analysis considers the impact of broad societal influences such as social values and class membership. One of the most visible characteristics of the population of abusing parents thus far has been low socioeconomic status (SES). Although this has repeatedly been noted in the literature (Jaraytane, 1977; Gil, 1970; Gil, 1977; Pelton, 1979) there seems to be some disagreement regarding the specificity of influence; i.e., what are the traits of lower SES groups that place them at higher risk for abuse than their middle class counterparts? Are these differences true or are the reporting laws and procedures biased towards the lower SES groups? Long-standing debate centering on the class issue has failed to come up with a definitive answer to this problem. Most of the reported findings identify a majority of the cases as occurring among parents in the lower SES groups. These findings have been criticized as unfair because lower economic group members are more visible (through welfare rolls, public health clinics and community agencies) and much more easily accessed.
for research purposes. Indeed, in a recent review of over 200 publications, not one study involving a middle class sample was located (Papatola, 1980). Pelton (1979), however, clearly believes that abuse is one of the effects of poverty and is more common among low, rather than middle or upper income individuals. He believes that the "classless stance", or the hypothesis that abuse occurs across all income levels is a political myth manufactured by politicians who refuse to assume the social responsibility necessary for effective program implementation.

The second global characteristic is proposed by Gelles (1979) who suggests that abuse occurs as a natural extension of the social violence evident among western cultures. Gil (1977) advances this one step further and believes that a reduced inhibition for the expression of violence among lower class groups, coupled with the cultural approval of physical force, may account for some of the differences between lower and middle class populations.

The second level of analysis, the specific level, in a sociological model identifies certain traits of individual (or family) functioning as characteristic among persons who abuse their children: the two most common of which are stress and social isolation.

The recognition of stress as a possible factor in abuse was first advanced in the mid-1970's. Several investigators were able to ascertain significant differences on stress levels between abusing and non-abusing groups of parents (Conger, Burgess & Barrett, 1979; Justice and Duncan, 1976;
Kempe and Kempe, 1978). In all cases, parents who abused their children reported higher levels of life stress than their non-abusing counterparts.

Kempe and Kempe (1978), in their most recent work, state that an abusive incident is much more likely to occur at a time of stress than at a time when stress may be absent. Marital conflict, loss of employment or an unexpected or unwanted geographical move are types of stressful situations capable of triggering abusive patterns.

Another major characteristic frequently noted among parents who abuse their children, but rarely empirically investigated, is social isolation (Young, 1964; Elmer, 1967; Reed, 1975; Kempe and Kempe, 1978; Rosenfeld and Newberger, 1978.) Garbarino and Stocking (1980) state that when families are not exposed to the nurturance and feedback provided by informal support systems, child maltreatment thrives. If patterns of maltreatment begin to emerge in a socially isolated family, the children have no 'allies'...likewise, parents who are in isolated families are cut off from potential sources of assistance (p. 5).

The direction of the relationship between abuse and social isolation is, however, somewhat unclear. Does abuse engender isolation? That is, do abusing parents isolate themselves from friends and family because they fear being 'found out'? Or is it that isolated families lack the support necessary to ward off abuse as Garbarino and Stocking (1980) suggest?
Parke and Collmer (1975) suggest that abusive parents isolate themselves to avoid detection. They believe such parents lack necessary skills to form and maintain friendships and community ties and/or are avoided by others in the community because they disapprove of the manner in which these parents treat their children.

Empirical evidence at this point, however, is lacking and a definitive statement on the direction of the relationship between abuse and isolation is premature.

Social-interactional. The social interactional approach, sometimes referred to as 'the effect of the child on the caregiver model', suggests that certain characteristics of the child interact with another set of characteristics in the parent to create a synergistic effect resulting in abuse. Both parent and child make significant contributions to this outcome.

It is from this school of thought, perhaps more than any other, that the notion of the child at risk matured. Helfer (1975) outlines three conditions he believes necessary for abuse to occur: parental predisposition to abuse, a crisis or a series of crises; and a special type of child, e.g., a child with behavioral, physical, and/or intellectual deficits. When all three conditions are met the situation is considered explosive and the child is considered to be at high risk.

Supporting the notion that the child is an active contributor to the abusive situation, Bishop (1971) has outlined several groups of 'at risk' children. Among these are
the illegitimate, premature and congenitally deformed child, as well as children of women with excessive work loads, multiple pregnancies or pregnancies complicated by maternal illness.

The 'special type of child' Heifer mentions may be, as Bishop outlined, premature, congenitally deformed or otherwise handicapped. In a study based on observations by hospital personnel and social workers long associated with the study families, Johnson and Morris (1968) found that 70% of the children under investigation had demonstrated physical or developmental deviations before actual injuries occurred. These children were described as overly active, retarded, speech or otherwise delayed, and were considered difficult to care for. Their behavior seemed qualitatively different from the behavior of children who were not abused.

Individual differences in infant temperament have been extensively investigated by Thomas, Birch, Chess, Herzog and Korn (1963). They were able to identify individual patterns of primary reactivity in early infancy which appeared persistent through later periods of life. Their findings were an important link in the understanding of how individual infant characteristics were capable of influencing infant care. Children who were difficult were very active. They demonstrated lower arousal thresholds and when aroused, exhibited more intense reactions (Thomas, Chess and Birch, 1968). A difficult child born to a woman feeling ill-prepared and/or unwilling to assume the responsibilities of parenting is more likely to be at risk for abuse than an
easy baby born to an eager and competent mother.

As the infant or child contributes to the interactive process, so too does the parent. Castle (1976), in a detailed investigation of families referred to a treatment center in London, similarly identified several predisposing factors to abuse. In a majority of the abuse cases referred, women cited the pregnancy as unplanned and unwanted. These mothers exhibited feelings of helplessness and frustration which fostered an attitudinal rejection of the child before birth. Many of these women considered themselves too young to bear a child and were not prepared to accept the responsibilities of parenting. Others were plagued with feelings of being overwhelmed, having given birth to another child as recently as 10 months prior to the current delivery. Many experienced severe marital discord and some were abandoned by the child's father during the gestation period. Almost without exception, these women lacked a supportive network from which to seek aid and were generally considered social isolates. Negative circumstances and attitudes surrounding the birth of a child are part of a parent's contribution to the dyadic interaction that may result in abuse.

Specific contributions of both the mother and the infant interact and therefore effect the subsequent development of both persons. The results of investigations from normal mother-infant pairs support the concept that abnormal parenting practices arise, not out of a single factor, but are the result of a combination of several elements. On the
the infant's part, signalling and response patterns (Bell, 1977), level of activity and manageability (Thomas et al, 1963) mesh with maternal variables such as attitude towards the child, sources of support, and information on child care (Klaus and Kennel, 1976; Maden and Wrench, 1977; Egeland and Brunnquell, 1979) to create a unique synergistic effect of mother-infant interaction.

An Integration. While the models described above are not mutually exclusive and may indeed have common elements, as individual models they fail in two major respects. The first weakness is an inadequate integration of much of the known information. The second is a failure, thus far, to clearly identify and examine the interactions among the most prevalent characteristics, and further, to incorporate those interactions into a complete model of etiology.

Belsky (1980) has responded to these criticisms by attempting to integrate divergent patterns of theory and etiology, believing that the differences between the current models are more apparent than real. His conceptual framework is based on an adaptation of Bronfenbrenner's model of ecological development. Briefly, Bronfenbrenner has delineated a scheme of systematic relationships, grounded in the contexts in which the developing person is found. His belief is that in order to fully understand human behavior, one must regard not only the individual, but the multiple systems in which the developing person is found. In addition, these systems must be explored for interactions that extend well beyond the immediate setting. There are four
basic systems to the Bronfenbrenner model, nested one inside the other: the microsystem, the mesosystem, the exosystem and the macrosystem. A representation of the overall framework is presented in Figure 1.

![Diagram of Bronfenbrenner's model of ecological systems]

A. Microsystem  
B. Mesosystem  
C. Exosystem  
D. Macrosystem

Figure 1. Bronfenbrenner's model of ecological systems.

Briefly, the systems are defined as follows. The microsystem is a complex pattern of dyadic interactions experienced by the developing person within a variety of given settings including the home, school, and day care. The mesosystem consists of interrelationships between two or more settings in which an individual is active. These may include relations between/among the home, school, neighborhood, family, peers, or work. The mesosystem is alternately defined as a series of microsystems. The exosystem refers
to one or more settings which affect the individual, but in which the person is not actually contained, e.g., political systems, city, state, and federal regulating bodies, etc. The macrosystem represents cultural consistencies which hold true for a large group of persons including underlying belief systems, ideologies and cultural mores in operation. In other words, it is the cultural blueprint for a given society.

Although Bronfenbrenner's model accounts for a number of external influences that affect an individual's development, it lacks a provision for the effects of 'intrapersonal development', or individual psychological development. Belsky's adaptation of Bronfenbrenner's model provides this missing link by incorporating Tinbergen's work in ontogenic development. By coupling Bronfenbrenner's concern for human ecology with Tinbergen's concern for ontogenic development, Belsky weaves a conceptual framework that is suitable both for ordering data previously gathered, and acting as a theoretical base for further investigations.

Belsky discusses three levels at which the ontogenic area may be considered pertinent for abuse research. The first level asks how a particular parent grows up to behave in an abusive manner. The second addresses the immediate antecedents of the event which would explain its occurrence at a given point in time. The third relates to the consequences of the act, i.e., the possible functions that the maladaptive behavior serves. He supports the addition of an ontogenic element to the model with evidence from the liter-
ature citing commonly observed traits in abusing parents including histories of maltreatment, nonnurturing environments, early exposure to violence and emotional deprivation resulting in role reversal (Belsky, 1980). In adding this ontogenic component to the center of the nested model, he deletes the mesosystem and retains the four structure system. Figure 2 demonstrates this adaptation.

![Figure 2. Belsky's adaptation of Bronfenbrenner's ecological model.](image)

Although this framework is a step toward a totally integrative model of abuse, its author feels it does not yet account for the necessary and sufficient conditions for child maltreatment to occur, but suggests the proposed framework as useful in guiding future inquiry.
An adaptation: the current model and basis for present investigation. In an attempt to begin incorporating an ecological framework for the basis of child abuse investigations, this author has developed a third model of ecology. This current model is unique to the two previously described models in that it addresses only those systems in which an individual is actually contained; in other words, only those systems in which the individual is a direct participant. For example, a mother is an active participant in the dyadic relationship with her child; she is contained in a microsystem. Similarly, a woman maintains direct contact with her friends, relatives and other important figures. Hence, she participates in her social network; she is contained in a mesosystem.

The decision to limit this investigation to systems in which the mother is actually contained was done for several reasons. First, while the author has no theoretical argument with the effects of both the exosystem and the macrosystem, there appears to be a natural division between those systems in which an individual is contained and those in which she is not. For example, while the political and governmental regulating bodies (exosystem) may affect the quality of life for its citizens, most individuals do not directly partake of that process. Similarly, cultural consistencies, norms and ideologies (macrosystem) may have a powerful impact on individual behavior, but are influences that evolve over extended periods of time. They are consistent for all those who live in the same society and
reflect cultural norms that have been years in the making.

Second, although individuals are generally not contained in the exosystem and macrosystem, there is little doubt that these systems are capable of influencing behavior. For example, the recent cutbacks of the Reagan administration in social welfare and educational programs directly influence the overall quality of life for millions of Americans. The reliable and valid assessment of the impact of these changes on individual behavior is extremely difficult. While we may hypothesize that vast cutbacks may increase stress, feelings of frustration, helplessness and a sense of isolation (in turn affecting the quality of the parent-child relationship), there is no way of reliably testing these associations within a reasonable time framework. The practical limitations with regard to the size and scope of the proposed research effort prompted the design of the empirically more manageable model.

Third, the systems that are included were chosen because of their logical fit with work previously conducted on abuse etiology. Variables believed to be representative of each system were selected on the basis of available literature, input from persons knowledgeable in the area, and on the availability and adequacy of assessment tools. For example, the variables selected within the ontogenic domain reflect primarily the personality development of the mother, as well as the quality of care she received in her own childhood.

Variables in the microsystem reflect the quality of
attachment between mother and child, and the mother's perception of how her family functions: its degree of expression, conflict, participation in outside activities, and attitude towards the general well-being of the family.

Mesosystem variables concentrate on the relationships between the mother and her social support system or social networks. They attempt to address the degree of social isolation, feelings of support and amount of stress the mother experiences.

Fourth, while each system is viewed as having the potential for a significant contribution to the prediction of abuse, it is assumed that the combination of these systems and influences interact among themselves to produce unique effects. A clearer understanding of these interactions will increase predictive ability and better facilitate eventual identification of problematic parent-child interaction.

Figure 3 illustrates the adapted model.
In summary, the ecological model upon which this investigation is based was derived from two main sources. The first was Bronfenbrenner's concern for the context in which individual development takes place and his elucidation of four ecological systems: the microsystem, the mesosystem, the exosystem, and the macrosystem. The second was Belsky's adaptation of Bronfenbrenner's model and his addition of a component that would allow for individual psychological, or intrapersonal, development.

The present model differs from the first two in that it investigates only those systems in which an individual is contained. Specifically, the systems considered are the ontogenic, the microsystem and the mesosystem.

Figure 3. Ecological model serving as basis for current investigation.
Purpose of Present Investigation

The purpose of the present investigation is four-fold. First, each system was studied individually to determine the amount of variance its variables were able to contribute to the overall outcome of abuse. Second, all three systems were regarded together to determine the total amount of variance they collectively accounted for. Third, each system was again regarded individually to assess its predictive ability; that is, to determine how well each system was able to predict abusing and non-abusing groups. Finally, all systems were regarded collectively to determine their predictive ability into abusing and non-abusing groups. The hypotheses for these are as follows:

(1) That personality and maternal abuse variables combined will account for a significant amount of the variance in the ontogenic domain.

(2) That maternal abuse will account for more variance than the personality data.

(3) That a significant number of cases will be correctly predicted into abusing and nonabusing groups solely on the basis of the ontogenic data.

(4) That data obtained on the family environment combined with the attachment ratings will account for a significant amount of the variance within the microsystem.

(5) That a significant number of cases will be correctly classified into abusing and nonabusing groups solely on the basis of the microsystem data.
That network size, support density and life stress will account for a significant amount of variance within the mesosystem.

That a significant number of cases will be correctly predicted into abusing and nonabusing groups solely on the basis of the mesosystem data.

That the combination of all systems into a single stepwise regression analysis will account for more variance than the variance accounted for by any one of the systems individually.

That the rate of correct classification into abusing and nonabusing groups from the total model is greater than the rate of correct classification for any one system individually.

In order to better describe groups of abusing and non-abusing women, and to determine the relationship between having been abused in childhood and system variables, the following question was posed:
What is the relationship between having been abused in one's own childhood and:

a) the incidence of specific personality characteristics and their influence on the subsequent abuse of one's children?

b) maternal perception of family environment and its influence on the abuse of one's children?

c) parent-child interaction and its influence on the development of abuse of one's children?

d) characteristics of an ongoing social network and its influence on the abuse of one's children?

Specifically, the hypotheses for these questions are as follows.

(10) Women who abuse their children are significantly more likely to have been abused in childhood than women who do not abuse.

(11) Women who abuse their children seek more sympathy and reassurance, are more aggressive, impulsive, suspicious, and anxious than women who do not abuse.

(12) Women who abuse their children are more likely to have children who are anxiously attached to them than those who do not.

(13) Women who abuse their children view family members as more dependent, higher on conflict, lower on expressiveness, and participating in fewer activities outside the home than women who do not abuse.

(14) Women who abuse their children have smaller social
networks and feel less supported by their networks than those who do not abuse.

(15) Women who abuse their children are higher on life stress than those who do not abuse.

Operational Definitions

Maternal Abuse (in childhood). The first ontogenic variable is maternal abuse. For purposes of this investigation, maternal abuse is defined as the maternal report of having been treated in a manner considered inappropriate (by the investigator) by either a primary caregiver (mother or father figure), or a sibling, who had the perceived permission of the caregiver to mistreat the subject and whose actions resulted in any one, or combination of the following:

a) physical marks on child's body including bruising, bite marks and/or skin discoloration;

b) injuries resulting in broken skin including contusions, lacerations and burns;

c) internal trauma manifested by broken bones, subdural hematoma, internal bleeding and previously undetected fractures at various stages of healing;

d) inadequate clothing and shelter for weather conditions: being locked outside of one's dwelling for lengthy periods of time;

e) abandonment by one or both parent figures for extended periods of time without adequate provisions for food, shelter and nurturance;

f) having spent a significant amount of time in several
foster dwellings;
g) admission to hospital for injuries inflicted by caregiver;
h) doctor's visit for injuries inflicted by caregiver;
i) sexual molestation by a person more than five years the child's senior at time of incident;
j) repeated sexual activity, including intercourse by an adolescent, e.g., a sibling or an adult.

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<tr>
<th>Ontogenic Variables</th>
<th>Operational Definition</th>
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<tr>
<td>Aggression</td>
<td>Aggression subscale score from Jackson's Personality Research Form (PRF)</td>
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<td>Defendence</td>
<td>Defendence subscale score from PRF</td>
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<td>(Suspiciousness)</td>
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<td>Impulsivity</td>
<td>Impulsivity subscale score from PRF</td>
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<td>Succorance</td>
<td>Succorance subscale score from PRF</td>
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<td>Stress</td>
<td>Stress score obtained from Egeland's adaptation of the Cochrane-Robertson Life Events Inventory</td>
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<td>Anxiety</td>
<td>Anxiety score obtained from Cattell's IPAT</td>
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<th>Microsystem Variables</th>
<th>Operational Definition</th>
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<td>Cohesion</td>
<td>Subscale score from the Family Environment Scale (FES)</td>
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<td>Expressiveness</td>
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<td>Conflict</td>
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<td>Independence</td>
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<td>Achievement Orientation</td>
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<td>Intellectual Cultural</td>
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Orientation

Active Recreation Orientation Subscale score from the Family Environment Scale (FES)

Moral Religious Emphasis Organization " "

Control " "

Parent-child Interaction Attachment Classification from the Ainsworth and Wittig Strange Situation Classification Tool.

Mesosystem Variables Operational Definition

Network Size The total number of persons the mother lists when asked to name all those people who are important to her.

Network Density The number of dyadic relationships in a network in proportion to the number of linkages possible, given network size. The formula most often given for calculating network density is \( a/ n(n-1)/2 \) where:
- \( a = \) number of linkages in the network
- \( n = \) network size:
- \( n(n-1)/2 = \) total number of possible links.

Network Support The degree to which the subject feels supported by her network members. Score on 'Support' subscales of Social Network Inventory.

Criterion Variables Operational Definitions

Abusing Mother For the purposes of this investigation, an abusing mother is defined as a woman whose caretaking skills result in any one or any combination of the outcomes that are listed under 'maternal abuse' (see pp. 21-22: a-j).

Nonabusing Mother For purposes of this investigation, a nonabusive mother is a woman who refrains from behavior that results in any of the outcomes that are
listed under 'maternal abuse' (see pp. 21-22: a-j).

Assumptions

This investigation assumes that child abuse is a product of multiple influences which interact among themselves to provoke violence. It is not the result of one single variable or factor. It is further assumed that the information obtained from the women during the course of structured interviews, is as true and valid a representation of their perception of experiences, both in childhood and in adulthood, as can be realistically obtained for purposes of this study.

Delimitations

This study is limited to the investigation of women and their children considered 'at risk' for abuse and neglect, most of whom are members of lower socioeconomic groups.
Research in the area of child abuse is perhaps best typified by the paucity of empirical data and an over reliance on clinical observations and anecdotal reporting methods. There are three basic methodological reasons for this: (1) problems with definition, (2) low incidence rate and (3) the validity of retrospective investigation.

Fundamental to the problem of research in child abuse is the issue of definition (Gil, 1970; ten Bensel, 1976; Kempe and Kempe, 1978). Central to this has been a noted lack of agreement among investigators as to what constitutes abuse; e.g., whether or not neglect, sexual abuse, non-organic failure to thrive and nutritional deprivation exist under their own rubrics, or are merely different points on the same continuum. While some investigators have regarded various forms of maladaptive parenting in this manner (Gil, 1970; Garbarino, 1977), others have tended to view abuse as etiologically separate (Steele and Pollack, 1968).

The problems of definition may stem from additional sources having little to do with basic behavioral classification. An additional factor may be a more general problem: societal resistance against labelling any maladaptive parent-child interaction too broadly. As has been adroitly pointed out, the broader the definition of abuse, the clearer its relation to normal caregiving, and the more serious an indictment one lodges against many forms of par-
ent-child interaction (Garbarino, 1977; Zigler, 1979). The notion of societal resistance against a broad definition may be most applicable in light of Gelles' findings (1978). Based on semi-structured interviews with parents from a nationally representative sample, he states that up to 71% of all children in the United States are physically disciplined at some point in their lives. It is not difficult to see that if a broad definition of abuse is adopted to include most forms of physical punishment, a high percentage of parents become potential 'child abusers'.

Albeit perhaps the most fundamental, definition is but the first problem encountered in abuse research. The second is low incidence rate.

The degree of frequency with which abuse occurs has been difficult to establish. Although all states in the United States and most provinces in Canada have implemented mandatory reporting laws, the actual numbers of authentic cases continues to be elusive. Differences in personal interpretation of the law, ambiguous reporting procedures and archaic record keeping systems contribute to the inaccuracies. Despite the problems with reporting however, abuse is generally recognized as a low incidence phenomenon. For example, in a recent longitudinal investigation with a high risk sample drawn from a major public health clinic (Egeland and Brunnquell, 1979), the base rate for abuse and neglect was cited as approximately 2%. This rate was somewhat higher than for the state in general.

The third problem involves the validity of self report
measures. With very few exceptions (Egeland and Brunnquell, 1979; Gray, Cutler, Dean & Kempe, 1979), most investigations have been retrospective in nature. For instance, when investigators attempt to determine antecedents of abusive behavior, they do so after the maltreatment has occurred. This type of research generally leads to a confounding of cause and effect. A case in point: Sandgrund, Gaines and Green (1974) studied the effects of abuse on cognitive development in abused, neglected and normal children. They found a significantly higher number of retarded (i.e., IQ's less than 70) children both among the neglected and abused groups. The rival hypothesis is that retarded or otherwise developmentally delayed children are at greater risk for abuse and neglect than their normal counterparts (Friederich and Boriskin, 1976; Klein and Stern, 1971) and that their retardation is a cause, or a contributing factor, rather than a result of their subsequent treatment.

The problems inherent in abuse research, however, have not diminished the efforts of investigators to better understand etiology. Although the earliest investigations tended to be unidimensional in approach and somewhat limited in focus, Belsky's (1979) suggestion to theoretically integrate available information has prompted the shift towards constructing a model better suited to account for a complex array of influences.

This literature review is framed within the context of the previously defined ecological model. Using evidence from available literature as support, it emphasizes the need
to combine and integrate information into a broader, more inclusive theory of etiology.

Ontogenic

The area of ontogenic development, as Belsky (1980) points out from Burgess' analysis, can be interpreted at three different levels: (1) how one grows up to behave in an abusive manner, (2) antecedents of the abusive event, and (3) possible consequences that the behavior may engender. For purposes of this study, only the first level will be considered.

This level assumes that there are certain traits and characteristics that can be determined as having had an impact on childhood experiences. In this investigation, these are defined as personality traits.

A discussion of personality development would not be complete without reference to the characteristics and the quality of the primary relationship, i.e., the parent-child alliance. While the development of individual differences hinges on many factors, the manner in which a child is treated contributes to its growth and development. It is of import therefore, to determine what commonalities, if any, exist among the personalities and the histories of abusive parents.

One of the most common characteristics of parents who abuse their children is that they were themselves abused. Frequently, the experience of early maltreatment results in what is known as 'role reversal' in adulthood (Steel and Pollack, 1968). This is typified by unrealistic expecta-
tions for the infant, especially with regards to its ability to care for the parent. Frequently, parents whose own histories were violent, maintained dependency needs in adulthood not satisfied in childhood. When these parents had children of their own, they viewed it as an opportunity to finally be cared for and loved. Because the child was unable to assume the emotional responsibility for the parent, parental frustration increased; they became hurt and angry at being 'rejected' and resorted to violence as an expression of their feelings (Belsky, 1978; Kempe and Kempe, 1978; Lynch, 1977; Oliver and Cox, 1975; Oliver and Taylor, 1971; Yelaja, 1977).

In addition to role reversal, other personality deficits have been observed in parents who mistreat their children. For example, Kreindler (1976) incorporated two Ericksonian constructs to explain what he believes to be psychopathic development in the abusing adult. Typically, he says, abusive mothers are characterized by a lack of tenderness, awareness and consideration of needs for their child. They have little self-confidence, exhibit low self-esteem and believe themselves unworthy of support and aid. In short, Kreindler says, they lack basic trust and personal identity. An absence of these characteristics is evident from the general inability to maintain solidarity with social groups. In addition, there is an expectation of rejection and disappointment for relationships in which they do engage.

Concordant with Kreindler, Spinetta (1978) was able to
identify similar characteristics among a sample of low SES women. He administered the Michigan Screening Profile of Parenting to four specific groups of parents; adjudicated abusers, spouses of adjudicated abusers, parents convicted of neglect and a control group. A factor analysis produced six clusters of behaviors, all resulting in significant differences between the abusing and non-abusing groups. The clusters were as follows: (1) relationship to one's own parents, (2) tendency to become upset or angry, (3) tendency towards isolation and loneliness, (4) expectations of one's children, (5) inability to separate parental from child's feelings, and (6) fear of external threat or control. While Spinetta does not suggest that personality is the sole cause for abuse, he does imply that it plays a definite role.

Gabinet (1979) compared MMPI profiles of three groups of women: an at risk group referred to a parenting program conducted by a large metropolitan hospital, a group of identified abusing mothers and a group of psychiatric outpatients not deemed at risk. All groups showed an elevation on the scales of depression, psychopathic deviance, paranoia and schizophrenia but the mean elevation for all groups was the same. Two scales discriminated the groups. The first one was scale 9, the manic scale, which measures hyperactivity, restlessness, and distractability. The second scale was scale 6 which measures suspiciousness, interpersonal sensitivity, rigidity in adherence to ideas and feelings of persecution. Despite the discriminating ability of these scales, Gabinet concluded that there was no definite abusing
personality profile.

Brunnquell, Crichton and Egeland (1979) assessed personality traits of 267 at risk women. A battery of tests was administered in the third trimester of pregnancy and again when the child was three months of age. Including measures of intelligence, locus of control, anxiety and maternal attitude, a factor analysis yielded four factors, two of which related specifically to personality. Their results indicated that mothers who provided excellent care were of higher intelligence, had more positive expectations regarding ease of child care, and had a better understanding of the mother-child relationship. In addition, these mothers were able to both recognize a child's impulsive behavior and modulate, rather than inhibit, those expressions. These women were also aware of a baby's ability to establish a relationship with its mother. Women who provided inadequate care were more aggressive, suspicious, and described themselves more negatively. In general, mothers who were young, had a negative reaction to pregnancy, and lacked an understanding of their infant and their relationship to the child were in greater jeopardy than women who did not display these traits.

Green, Liang, Gaines, and Sultan (1980) administered the Current and Past Psychopathology Scales (CAPPS) to 60 women: 20 in each group of abusing, neglecting, and normal mothers. The CAPPS questions relate either to current indices of pathology or to past pathology. He found no significant differences among groups for evidence of current
pathology. Univariate tests on subscales of past pathology indicated abuse groups were significantly different on neurotic childhood, disorganization, and anger-excitability. There were no significant differences on impulsivity, dependency, or depressive anxiety. Their data suggest, as does that of Brunnquell, Crichton, and Egeland, (1979) that the most fruitful directions for personality contributions lie in a combination of, rather than individual, variables.

In one of the few investigations conducted on men, O'Hearn (1975) compared fathers in abusive situations with those not involved in similar behaviors. Matched on variables such as father's age, income, number of children, and number of children at home less than three years of age, he found significant differences between groups on traits such as powerlessness, empathy, self-esteem, ego strength, and social isolation. Fathers who abused their children felt less powerful, displayed less empathy, had lower levels of self-esteem and were more socially isolated than nonabusive fathers. In addition, a discriminant function analysis using these variables correctly classified 20 of the 23 abusing fathers.

Summary

Parental personality is believed to play a significant role in the outcome of abuse. Several studies have indicated that abusive parents are more impulsive, aggressive, lower in self-esteem, and carry unmet dependency needs into adulthood than their non-abusing counterparts. Assuming that personality development is influenced by a child's
interaction with its parents, the manner in which a child has been treated influences not only the development of certain characteristics, but the manner in which an individual ultimately responds to its own child.

Both research investigations and clinical findings report the strong association between abusing one's child and parental history of abuse. Those that abuse tend to have been abused. What is less clear, however, are personality differences between abusing and nonabusing parents, given a similar background. Unfortunately, most studies investigating personality differences fail to account for the commonality of parental history. For example, few studies investigate the difference between abusing and non-abusing parents given that they have all been abused. Likewise, abusing and non-abusing parents, all of whom have clearly not been abused, need to be investigated as well.

It may not be differences in personality per se that distinguish these groups; that is, it may not be true that abusive parents are actually more aggressive or impulsive. An alternative hypothesis, not necessarily exclusive of the first, is that abusive parents were abused and that a lack of good quality care in childhood interacted with specific individual traits to produce a more aggressive or impulsive adult.

The role of personality in abuse might best be investigated by first comparing groups on the basis of their treatment in childhood. While the broad group comparisons (abusing vs. non-abusing) may continue to provide interesting
descriptive information, the consideration of how the parent was treated in childhood begins to build a theoretical link between early parental treatment, personality development and abuse.

Microsystem

The microsystem in this model, basically represents the dyadic interaction between the child and the mother. Several researchers have investigated the contribution of parent-child interaction to the development of child maltreatment including factors such as bonding, attachment (Egeland and Sroufe, 1980; Klaus and Kennell, 1976; Pilling and Pringle, 1978; Schaeffer, 1977), and verbal interaction (Burgess, 1979; Burgess, Anderson, & Schellenback, 1980; Burgess and Conger, 1978; Disbrow, Doerr & Caulfield, 1977). In this investigation, the dyadic interaction is best characterized by the construct of attachment (Ainsworth, 1973).

Bowlby (1969), on whose work much of the attachment data are based, outlines four specific phases of the development of attachment. Briefly, the infant begins with a capacity to respond to social behavior but an inability to discriminate between persons eliciting those behaviors. In the second phase, the infant can both respond to and discriminate between familiar figures. In the third phase, there is an active initiation of proximity seeking and contact behaviors, while in the last phase, an infant is able to infer its mother's goals, and may begin to attempt to alter those goals. The degree to which a mother dissembles her goals and discourages the infant from discovering what
they are may be the degree to which attachment is hampered. Ainsworth (1978) lists three conditions necessary for attachment to develop: sufficient opportunity for interaction with a specific figure (primary caregiver), the development of the infant's discriminatory ability, and the onset of object permanence - the cognitive awareness that a figure continues to exist outside of the range of the infant's direct perception.

The construct of attachment itself has been defined and studied in a variety of ways. Ainsworth (1978) has clearly outlined the differences between definition and behavioral manifestations. Attachment refers to the bond, the tie or the more enduring relationship that occurs between a young child and its mother. It is a construct that may be inferred from a propensity to seek contact with another individual over time despite any variations in behavior. Attachment behaviors are viewed as a diverse group of intermittent actions which promote contact and vary in intensity, according to circumstance. Support for this distinction has most recently been offered by Waters (1978) who states that negative evidence surrounding the notion of attachment, especially in construct validation research, is a result of an initially incorrect body of theory, inappropriate use of measuring devices and poor experimental design. The problems with citing specific infant behaviors as typical of the presence or absence of attachment, is that evidence for the temporal stability of discreet behaviors is lacking; further, recognition of the context in which attachment behav-
iors occur has been ignored. He concludes that there is little to gain by regarding attachment as a trait, and suggests that future research efforts consider it a more dynamic process. Ainsworth (1978) agrees and states that as attachment was not intended to be viewed as a personality construct, there is no theoretical basis for expecting all attachment behavior to be positively correlated.

A variety of factors are believed to be at work in the attachment process. It has been suggested that while the amount of mother-infant interaction may determine whether or not a child becomes attached, it is the type of interaction that shapes the quality of that attachment. Clarke Stuart's investigation (1973) supports this hypothesis in that the mother serves as a mediator of stimulation for her infant. She found that immediate maternal response to an infant's behavior had a significant effect on later occurrence of the behavior. Her study also indicated that responsiveness and overall maternal care were highly correlated with the infant's level of competence, suggesting a reciprocity of the interaction.

More recently, a series of investigations have tested the hypothesis that at least some patterns of attachment have antecedents in the infant's behavior and in the interactive processes of the mother and the infant. Waters, Ege-land and Vaughn (1980) administered the Neonatal Behavior Assessment Scale to the first 100 (total 267) infants from economically disadvantaged backgrounds, whose mothers were participating in a longitudinal study investigating mother-
child interaction. Infants and mothers were later assessed for attachment via Ainsworth and Wittig's Strange Situation. Their preliminary results indicated that infants rated as either securely attached or avoidant were normally responsive and resilient during the neonatal period, but that infants classified as resistant showed signs of unresponsiveness, motor immaturity and problems with physiological regulations. Mothers of this last group of infants were observed to experience difficulties coordinating interaction, physical contact, and face to face episodes during feeding situations. By the end of the first year, they were rated as less available and less effective in response to the infant's signals than mothers of securely attached babies. This set of data points to the early age at which the process of mutual influence begins. The authors stress that attachment is a dyadic process that occurs over an extended period of time.

While many behavioral antecedents of attachment have yet to be clarified, the stability of the construct has been well documented (Vaughn, Egeland, Sroufe & Waters, 1979; Waters, 1978; Matas, Arend, & Sroufe, 1978). The stability of this measure over time allows certain behaviors to be correlated with specific attachment ratings. The correlation of an attachment rating with a behavior or a series of behaviors may enable a greater degree of prediction of later abusing and nonabusing groups. This may be the first step towards multigenerational research. If attachment classifications of abused children are known, and these children are
followed through their years of adolescence, adulthood and, finally, parenting, the classifications may facilitate in the prediction of future abuse.

The results of the research on attachment support the concept that the nature of attachment can only be determined by investigating contributions of both the mother and the child. What are these specific contributions and how might they affect outcome?

As discussed earlier, Thomas (1963) and his colleagues were able to identify individual patterns of primary reactivity in infants. These patterns, identifiable in early infancy, appeared persistent through later periods of life. Although the basis for these differences were unknown, genetics, familial influence, prenatal and parana­tal influences and early life experience seem to contribute.

Bell (1975) explored the nature of the mother-infant interaction, and outlined several contributions of the infant to the initiation, maintenance, and termination of both caregiving and social interaction episodes. The infant launches caregiving episodes with its mother by crying, fussing or signalling in other ways for some type of attention. The physiological and hormonal changes in the mother, coupled with early behavioral aspects of the infant, such as thrashing and the appearance of helplessness, trigger her response. Bell suggests that these changes, along with early infant behaviors, elicit different responses from different mothers. Certainly, to the stressed or immature mother, the sight of a thrashing, crying, helpless infant
may trigger a vastly different set of responses than those evoked in a competent, confident mother. In the former, feelings of anger or frustration may provoke abusive behavior rather than appropriate caregiving strategies. The infant may define its own limits by accepting or refusing the stimuli offered by the caregiver. If the parent has limited knowledge of normal infant behavior and interprets refusal of stimuli or affection as personal rejection, hostility and violence may result.

If a child actively contributes to the interactive process of socialization, then we may reason that he also contributes to maladaptive interactions. Support for this notion has been documented by investigations which suggest that deficient children may be at greater risk for abuse than 'normal' children. (Johnson and Morris, 1968; Bishop, 1971; Friederich and Boriskin, 1976).

Summary

The microsystem in this model represents the dyadic relationship between the mother and her child. For purposes of this investigation, this relationship is characterized by the attachment construct as defined by Ainsworth (1973).

The relationship between mother and child and the ability of a woman to adequately care for an infant is influenced by a variety of factors. These include infant temperament, level of infant activity, maternal maturity, knowledge of her infant, and ability to assess and meet needs and demands.

The attachment relationship reflects the culmination of
both the activities and the levels of skill of mother and child. Both make significant contributions to this process reflecting the reciprocity of the interaction.

The concept of attachment is important to the investigation of child abuse for three reasons. First, because attachment reflects an interactive process, it steers away from the concept of a parent acting in a nonprovoked fashion. It enriches the basic understanding of abuse etiology by allowing for an interaction of both mother and child factors. Second, precisely because both mother and child contribute, it affords the opportunity to assess those contributions one at a time. For example, it allows the inspection of the relationship between a mother's treatment in her own childhood and the subsequent quality of attachment with her child. Is there any relationship between women who have been abused and the quality of attachment between them and their children?

Third, what affect does abuse itself have on attachment? Do women who abuse have children who are more anxious in their attachments than women who provide adequate care? These are questions seldom raised in the current literature. If, as is so frequently cited, abusers tend to have been abused, we need to know what the effects of early maltreatment are, especially with regards to an individual's later ability to parent.

**Mesosystem**

The third component, the mesosystem, is defined by Bronfenbrenner (1979) as a system of microsystems, or as a
series of interrelationships between two or more settings in which an individual is an active participant. Put simply, a mesosystem may be defined as a social network with the individual acting as the primary link between herself and other systems.

The area of social networks has been repeatedly hypothesized as an important variable in the etiology of abuse. The most commonly noted network characteristic of abusive parents has been social isolation (Elmer, 1967; Garbarino and Stocking, 1980; Gray, Cutler, Dean & Kempe, 1979; Kempe and Kempe, 1978; Rosenfeld and Newberger, 1978; Young, 1964). The assumption is that network connectedness functions as a type of buffer or prevention against abuse, while isolation may foster it.

Isolation, however, is only one characteristic of social networks. In order to consider networks on a broader basis, it is necessary to define other traits that may have an effect on parent-child relations. Duncan-Jones (1978) proposes that the commonly held assumption that social relationships are supportive and protective against illness is rhetoric unless we begin to specify which types of relationships are supportive and which types are not. Cochrane and Brassard (1979) agree that few researchers have seriously attempted to accurately describe and measure social networks. Families, they state, are not simply supported or isolated; the links are complex and ever-changing.

Methods of gathering data on social networks are diverse and have been, at times, controversial. While some
theorists have chosen to extrapolate global patterns of interrelationships by relying heavily on the use of algebraic techniques and graph theory (Lorrain and White, 1977), others have incorporated direct field observation, survey techniques and interview strategies to hypothesize social network relationships among groups of friends and families (Bott, 1957; Stack, 1974; Young and Wilmott, 1957).

For a time, even the definition of social networks was controversial. Years of research and scholarly communication, however, have resolved many of those definitional problems (Tolsdorf, 1976). Banck (1973) discusses three of the most common characteristics of networks. The first two of these are the focus for the current investigation.

What stands out, ... is the basic notion that networks have to do with social individuals, rather than groups. Linked with this focus of attention are the following three notions about social networks. Firstly, ego has social relations with other individuals, who in turn have social relations with others, those being directly linked with ego or not, and so on ... Ego is entangled in a network of social relations, the structure of which influences the behavior of ego. Finally, opposed to the second notion, the individual is supposed to be able to manipulate to a certain measure, his social network for his own ends.

The content of Banck's address moves beyond simple definitional aspects of social networks. What he directly implies is that network properties are capable of differen-
tially affecting individual behavior. The exploration of these properties, and some hypotheses about how they act, either alone or in concert with other properties, is discussed in the next sections.

Network Support. The first point to be addressed is that individuals are entangled in a network of social relations and that the structure of the network influences behavior. There are two basic points to consider in this statement. The first is an assumption that all individuals are, to some extent or another, actually enmeshed, or 'entangled' as Banck would have it. This notion, however, precludes the possibility of isolation; if one is enmeshed, one cannot be isolated. If the structure of one's social enmeshment is devoid of actual relations, then this lack of entanglement is equally influential to the behavior of the individual. If the structure of social relations influences individual behavior, how does this occur? By what means is behavior influenced? In response to this, the following proposition is offered: The structure of one's social relations influences individual behavior in three ways: (1) by guiding or offering certain socially accepted parameters, (2) by providing various types of support, and (3) by providing corrective feedback.

Caplan (1974) suggests that social networks are capable of guiding individuals by providing cues which signal societal acceptance of certain behaviors. He hypothesizes that deviant behavior occurs as a result of blocked messages; that is, societal expectations are not being consistently
communicated to the individual. Without consistent communication, there can be no subsequent societal evaluation of the behavior, no new information input into the system and, therefore, no possibility of behavior change. If the messages are being transmitted, but are not being acted upon, then it may be that the individual is unfamiliar with the expectations and the evaluative cues that are being provided. This perspective is largely agreed upon by others in the area. For example, Cochrane and Brassard (1979) suggest two major ways networks might influence, or guide parents. Network members may contribute to child rearing procedures by condemning or sanctioning certain actions, thereby providing child rearing controls; or, they may further influence parenting procedures by advice giving, direct reinforcement and, perhaps more importantly, by providing observable examples (role models) of appropriate parent-child interaction.

The second manner in which social networks influence behavior is through the provision of various types of support. Caplan (1974) states that most people develop and maintain a sense of well-being by involving themselves in a range of relationships that satisfy specific needs. Both enduring and short term supports are likely to consist of three elements: (1) a mobilization of psychological resources to master emotional burdens, (2) a sharing of tasks, and (3) a provision of extra supplies of money, materials, skills and cognitive guidance.

Similarly, Gottlieb (1980) was able to identify four
specific types of support available to female heads of households. The first type he calls 'emotionally sustaining' help. This type of aid enables women to explore their problems and concerns in a safe, supportive atmosphere. The second type he calls 'problem solving behaviors'. This support provides three basic elements and augments the mother's problem solving resources with new and/or additional information, ideas, perspectives and direct assistance. The third type of help he calls 'unconditional access'. This type of support occurs from the knowledge that support is available on a wherever-whenever basis. The knowledge that help is available on an unconditional basis is, in itself, a source of support. And lastly, Gottlieb has listed 'direct advocacy' as a source of support; i.e., an individual who is willing and able to directly intervene with a problem situation at the source of the problem, or who is willing to appeal to a higher source to gain service, support, etc. In addition, Pattison, Llamas and Hurd (1976) suggest that networks may be most helpful in stressful situations by providing a continuous flow of positive emotional support and ready and available assistance.

Lastly, networks offer support through the provision of feedback (Caplan, 1974; Stack, 1974). Offering corrective feedback regarding cultural mores and norms, including child rearing practices, aids in the parent's socialization as a parent and facilitates participation in the mainstream of group activity.

Given that networks are capable of providing an array
of supports to a family unit, what happens to families that either isolate themselves or are isolated by their communities? Recalling Parke and Collmer's (1975) suggestion that abusing parents are either avoided or abandoned by their networks, one may assume that the opportunities for guidance, support and feedback are all greatly diminished. The absence of corrective input most likely increases the potential of a maladaptive response pattern.

If, for whatever reason, support is unavailable, the probability of abuse increases.

**Network Density.** Banck's second point states that the individual is involved in a series of social relations with other individuals who in turn have social relations, some of which are directly linked with the individual, others of which are not. What Banck is addressing here is the concept of network density. Tolsdorf (1976) defines density as the number of dyadic relationships (linkages) in the network in proportion to the number of linkages possible given the network size. The relationship between network density and child abuse is best understood by first investigating the relationship between density and other mental health factors: factors that have been identified as related to abuse. The interrelationships among these variables are intricate and, at times, circuitous, further reflecting the complexities inherent in the problem.

When an individual is embedded in a network with a high density rating, it is likely to be indicative of several characteristics of both the individual and the network.
First, there is an inverse relationship between social class and network density: the lower the socioeconomic level, the higher the density index. Support for this relationship was first evidenced by Bott's (1957) investigation of the social and psychological organization of urban families. In looking at factors directly affecting the structure of social networks, she discovered that density was higher when feelings of social similarity and neighborhood continuity were stronger and when members were more localized in their activities. A higher degree of connectedness was also characteristic when opportunities for making new friends were limited either by a lack of financial resources or by a lack of mobilization. Networks were less dense, or more loosely knit, when people moved out of the neighborhood. These neighborhood moves generally resulted from the promise of better employment and upward mobility. These findings were supported in later studies by Cubbitt (1973), McCallister & Fischer (1978) and Belle (1980). But how are low SES and high density related to abuse? This link is hypothesized by looking specifically at the structure and the function of networks, including levels of stress.

Stack (1974), in her seminal work on the social networks among low income urban blacks, looked intensively at both structure and methods of support available to network members. The recurring theme throughout her work is the network emphasis on reciprocity. Akin to an 'insurance policy', sharing with one another builds the necessary credit against which to draw in the event of need or emergency.
People share with one another their scarce resources because of the extreme urgency of their situation and as a protection of their own investment. Stack says this system of exchange is purposeful and blatant. Outside people are frequently perceived as possible solutions to troublesome situations and are cultivated for their potential usefulness. Reciprocally, support is made available in emergencies and other times of need.

In investigating the relationship between social supports and depression, Belle (1980) found that feelings of mastery (a sense of having control over one's life) were positively correlated with having help in an emergency and the availability of care for children in non-emergency situations. The second type of support was also related to fewer symptoms of depression and anxiety. Brown, Bhrolchain, and Harris (1975) found that the lack of an intimate, confiding relationship with a husband or boyfriend increased the chances of developing a psychiatric disorder supporting Belle's (1980) findings that women who reported having someone to confide in, demonstrated fewer symptoms of depression and a greater sense of mastery.

One conclusion easily drawn from all this is that a high degree of social connectedness is beneficial. On the surface, it provides the individual with support and aid in a variety of problematic situations. Belle (1980), however, cautions against such a simplistic interpretation. Her results indicated that the more a network was made up of relatives, and the denser the network in general, the more
often women reported having no one to tell how they were really feeling. Women were actually more likely to participate in neighborhood sociability when conditions were worse, and when their levels of stress were higher. Assuming that the constant flow of service from neighbor to neighbor and household to household reduces anonymity, consistently high expectations for reciprocity may engender a stress of its own: a much more chronic and pervasive stress than that generally associated with life change. Herein lies the third and final link in the chain - the relationship between abuse and life stress.

Several authors have demonstrated a relationship between life stress and child abuse (Egeland, Breitenbucher & Rosenberg, 1980; Justice and Duncan, 1975; Justice and Justice, 1976; Kempe and Kempe, 1978).

Justice and Duncan (1976) administered the Social Readjustment Rating Scale to groups of abusing and non-abusing parents. Significant differences between groups suggested that abusing parents demonstrated higher levels of stress than non-abusing groups. To extrapolate these finding, however, to all stressed parents would be erroneous. Given the low incidence rate of abuse as a phenomenon and the increasing recognition of the prevalence of stress among western societies, the conclusion that all stressed parents are abusers is far too simplistic. Egeland, Breitenbucher, and Rosenberg (1980) attempted to discover why some stressed parents abused their children, while others, equally stressed, did not. They administered a modified version of
the Cochrane-Robertson Life Events Inventory to 267 high risk women recruited from a public health center. Membership in abusing or non-abusing groups was predicted via discriminant function analysis. This was used to determine the relative importance of changing life events as compared to certain mother, infant, and interaction variables. Since the majority of stressed women did not abuse their children, the determination of the influence of a variety of variables was critical to the overall understanding of the problem. Their results indicated that mothers who abused their children and were highly stressed also demonstrated significantly higher scores on anxiety, suspiciousness, and aggression as compared with highly stressed mothers who did not abuse their children. They had less understanding and awareness of the difficulties and demands involved in parenting. While there were no significant differences on type of stressful event, the abusing group perceived their events as more traumatic, chaotic, and disruptive. Maternal ego boundary, i.e., the mother's ability to view herself as separate from her infant, was also indicative of mother-child interaction. Women who were less able to make that distinction were also less likely to isolate stress to a particular incident. This in turn, interfered with adequate caregiving responses. They concluded that high life stress combined with certain maternal traits, infant behaviors, and patterns of interaction increased the likelihood of abuse as an outcome of the child-caregiver relationship.
A Mesosystem in the current investigation is defined as the structure and characteristics of maternal social networks. The most prominent network characteristic cited in the literature has been social isolation, i.e. women who abuse their children appear cut off from most forms of physical and emotional aid.

The relevance of social networks to child abuse becomes evident once specific types of support are defined. Typically, networks are capable of guiding, offering corrective feedback and financial or emotional resources a family may lack. One hypothesis is that isolated families become impoverished and are unable to benefit from mutual support systems.

But the relationship between social isolation and child abuse has rarely, if ever, been empirically determined. It is not clear from the available literature, if abusive mothers truly have fewer supportive contacts than their non-abusing counterparts. It is also unclear at this point how those networks are structured, and how these women perceive the amount of support available. An additional factor tied to the structure and function of networks is life stress. How do networks help individuals absorb, or cope with stress and how may they actually promote stress? One theory is that the constant reciprocity noted among networks of lower SES families may engender a degree of stress in and of itself. As most mothers who abuse their children and are the basis for scientific investigation, come from lower class settings, they may be operating under a deficit not
found in middle class women.

The greatest unknowns, however, lie in the differences between individuals who have common backgrounds, but who exhibit different methods of child rearing. For example, do all women who abuse their children feel unsupported, or only those who themselves were abused? What are the differences between these groups in terms of network support, density, and life stress?

These are the specific types of questions that need to be answered if the role of networks in abuse etiology is to be better understood.
Child abuse research has been complicated by a number of methodological problems. Foremost among these have been operational definitions of abuse and neglect, unavailability of large sample sizes, lack of adequate control groups and a heavy reliance on self report and retrospective measures.

In response to these problems, Egeland and Brunnquell (1979) have described an at risk approach to the investigation of child maltreatment. This probabilistic method assumes that certain groups can be identified in which a specific problem will develop with a higher degree of frequency than it would in a normal population. This basically healthy group, although considered at risk as a whole, provides not only a higher incidence rate of abuse, but also provides the "appropriate group for comparison of the effects of the various factors which put the child at risk, for it is only in contrast to the good outcomes within the same sample that the major effective influences in the poor outcomes can be identified." (p. 220)

There are three steps needed to incorporate a prospective method. First, the high risk group must be identified. Second, the variables selected for investigation must reflect the knowledge base at hand. Third, the group must be followed longitudinally and closely monitored for the development of abusive patterns.

The current investigation is part of a longitudinal
study designed to identify certain patterns of mother-child interaction, including those that result in abuse.

Subjects

The population consisted of 267 mother-child pairs recruited from the Minneapolis Public Health Infant and Child Care Clinic. This is the group from which the current sample was drawn. The incidence rate of abuse and neglect in the Public Health Child Care Clinic population is roughly 2%, a rate considered somewhat higher than for the state in general, and which for purposes of this investigation characterized the sample as at risk. In addition, most women come from lower socioeconomic backgrounds and cannot afford the services of a private physician.

Over 400 primiparous women receiving prenatal care were recruited. One hundred and thirty-nine were unable to participate for the following reasons: moving (N=31), mate refused to allow participation (N=19), delivered before prenatal testing could be completed (N=17), baby placed for adoption (N=5), baby died during delivery (N=2) and other, e.g., language problems, too busy, refusal to be observed during a feeding situation (N=65).

Educational distribution among the 267 subjects was somewhat heterogeneous. Forty-one percent of the mothers did not complete high school while 54% did. Of the latter group, 20% went on to college. Five percent did not graduate from high school but continued their education in some
type of vocational school. Nine percent of the sample were Native American, 8% black and 4% from other minority groups. Mean age at time of delivery was 20.52 (SD=3.65, range 12-34). When clinic records were examined for differences on age, education and occupation between those that had agreed to participate and those that refused, no significant differences were noted. Despite every effort to enroll the father figure, only 29% agreed to participate. Subject drop out within the first four and half years of the study has totalled approximately 28% (N=77), a fairly low percentage considering the duration of the investigation.

Data Gathering and Classification Procedures

Numerous data were collected on psychological, social and medical variables prenatally, perinatally and postnatally. Mothers were tested at the 36th week of pregnancy and mothers and infants were tested approximately every 6 months thereafter, culminating with the child's sixth birthday.

The measures reported here were designed to assess maternal personality, maternal treatment in childhood, infant attachment, the social climate of the family environment and the mother's social network.

Each woman currently participating in the investigation (N=190) was asked a series of questions regarding the quality of caretaking received in her own childhood. These questions were administered via a standardized format and
were asked by research assistants who had been known to the subject for at least a year and a half prior to the administration of this interview. The results of this interview were used to determine whether or not the mother herself was a victim of abuse.

Four specific groups of women emerged from the interviews. The first group, the not abused group, described their families of origin as loving, concerned and encouraging. Most importantly, they were able to describe a sense of emotional security that women in the other groups failed to mention. 'I always knew that no matter what I did my parents would be there' was a common, almost universal statement for women in this group. The second group, the middle group, described their family backgrounds as quiet and relatively uneventful. Family descriptions were similar to those in the not abused group but they failed to project the image of emotional security. The third group, the borderline group, described treatment bordering on abuse but lacked the physical evidence of having been mistreated. For example, a common statement made by these women was 'I remember my daddy beating me with a hairbrush when he got drunk, but I don't remember ever being bruised.' The last group, the abused group, consisted of women who clearly reported incidences of maltreatment in childhood. These women were burned with irons, scalded with hot water, thrown into walls and radiators and hit repeatedly with belts, switches, and electrical cords. The women in the first group comprised the not abused group of mothers. The abused
group was made up of members from the fourth group described. Groups two and three were omitted from the present investigation because the interest was clearly in comparing the abused with the non-abused women.

Following classification into either the abused or not abused groups, each subject was further assigned to either the Abusing Group (Group A) or the Not Abusing Group (Group B).

Abusing mothers were women whose caregiving habits resulted in injurious outcomes to their children such as bruises, lacerations, burns, broken bones or internal injuries. Inadequate food or clothing, abandonment and/or placement in several foster dwellings also constituted abuse. Children who were sexually molested, forced to engage in intercourse or other sexual behavior either by a parent, another adult or an adolescent were also included. Nonabusive mothers were women whose caregiving habits enabled them to provide secure environments, free from the injuries listed above. In addition, these environments were generally safe, nurturing and stimulating. These women were typically able to assess a child's need and provide comfort.

The determination of the care groups was based primarily on three criteria: (1) results of the Child Care Rating Scale (2) referral to child protection (3) information gathered from standardized interviews administered at 42, 48 and 54 month testings: These classification procedures yielded a total of 107 subjects in the following groups. Not Abused/Not Abusing (N=44), Not Abused/Abusing (N=14),
Abused/Not Abusing (N=11), Abused/Abusing (N=38).

Following classification procedures, each mother was asked to complete the Family Environment Scale (Moos, 1976), and a Social Network Inventory. These data were gathered both by experienced research assistants and the author. Information was gathered during home visits and was used in conjunction with the following: Jackson's Personality Research Form (administered as part of a personality battery at the 36th week of pregnancy), attachment ratings based on the Ainsworth and Wittig Strange Situation (1969), Cochrane and Robertson's Life Events Inventory (1973) and the IPAT Anxiety Scale (1963).

Instrumentation

Maternal Early Treatment. The Maternal Early Treatment (MET) interview was designed by the author for the current investigation. The purpose of this instrument was to determine how women perceive their own treatment in childhood. Because of the delicate nature of the content, questions were worded to facilitate as much rapport between interviewer and subject as possible. Questions were constructed after discussion with experts in the field who had intimate knowledge of this particular sample. The content of the interview reflects treatment believed to be harmful to the child and constituting abuse as indicated in the current literature.

The interviews were conducted at one of the regularly
scheduled testing periods of 42, 48 and 54 months and were administered by experienced research personnel who had been involved with the current sample for no less than two years.

**Care Rating Scale.** This checklist was developed by Egeland and Deinard (1977) as a measure of the quality of care a child receives in the home. Items were selected from three different sources: (1) existing items from the Childhood Level of Living Scale (Polansky, 1972) (2) professionals in the Minneapolis/St. Paul area working with abusing and neglecting families (3) observations of the situations of a number of abusing and neglecting families. The final item set was chosen on the basis of how well they differentiated abusing and neglecting families from those with no known abuse or neglect. After final selection of items, validity data were obtained by determining how accurately the scale differentiated 10 known abusing families from 10 similar families with no known abuse. The scale differentiated the two groups 100% with no overlap in the total number of items checked for the two groups.

The checklists were completed by experienced research assistants following a visit to the subject's home. These home visits are conducted approximately once every 6 months. The 2 most recent scales were used as an index of the quality of caregiving in the home.

**Personality Research Form.** Jackson's Personality Research Form (1967) is a standardized personality inventory measuring from 15-22 constructs depending on the form used. Instrument construction began with the adaptation of 20
trait items from a list of needs originally formulated by Murray. These traits were further refined and over 100 face valid items were generated for each trait definition. Each item hypothetically bore some conceptual link to the trait being measured. These items were critically reviewed by 2 or more editors and administered to a large group of college students. Twenty items for each of the final scales were selected. The resulting scale demonstrated high content validity. Internal consistency reliability estimates using Kuder-Richardson 20 for the four subscales are as follows: Aggression, .94; Defendence, .80; Impulsivity, .92; Succorance, .92. One week test-retest reliabilities for each scale were as follows: Aggression, .85; Defendence, .72; Impulsivity, .81; Succorance, .84.

**IPAT Anxiety Scale.** Cattel and Scheir's (1963) IPAT Anxiety Scale is a 40 item questionnaire designed to measure free floating anxiety in a rapid, standardized and objective manner. The construction, rationale and validity was accomplished over an extended period of time.

Five factors cluster together to yield a composite score. These primary factors are described as (1) Tense/Relaxed, (2) Apprehensive/ Self Assured, (3) Emotionally Unstable/Emotionally Stable, (4) Suspicious/Trusting, (5) Uncontrolled/Self Controlled.

Internal validity, which is estimated between .85 and .90, was obtained by a convergence of three methods of validation estimation: (1) item to subscale loadings (2) item to total test correlations and (3) the derivation of the
square root of the split half reliability. Reliability estimates range from .8 (Kuder-Richardson 20) to .93 (test-retest). Internal consistency reliability estimates for each subscale range from .59 (Apprehensive/Self Assured) to .26 (Suspicious/Trusting).

**Life Events Inventory.** The Life Events Inventory is a 43 item checklist designed by Egeland and Deinard (1977) and is based on the Cochrane-Robertson Life Stress Inventory (1973). Thirty-eight items from the Life Stress Inventory were incorporated into the present inventory. Five additional items, designed specifically for this sample and having to do with welfare, money problems and a boyfriend's move out, were added.

In order to assess the varying degrees of disruption involved with particular items, a new scoring system was developed. Each item was scored and the response weighted from 0-3 depending on the severity of the disruption and the amount of readjustment needed. This scoring system was constructed via the following steps. First, a number of responses was regarded and a general set of criteria for determining the degree of disruption was devised. Criteria included frequency and duration of events, closeness of the relationship of individuals involved and consequences of the event. Second, criteria were applied to the items. Third, a series of revisions followed and a specific set of criteria for each item was developed. Inter-rater reliability at the 6 month visitation was 95% agreement.

**Attachment Ratings.** The attachment ratings of mother-
child pairs were assessed via the Ainsworth and Wittig Strange Situation (1969). This is the procedure most commonly used to assess the attachment construct.

The procedure itself consists of eight time segments totalling approximately 22 minutes. Basically, these episodes are a series of brief separations and reunions for the mother and her child in an unfamiliar setting. All situations were videotaped and later coded into one of three basic classifications: Anxious/Avoidant (A), Securely Attached (B), or Anxious/Resistant (C). Anxious Avoidant infants typically exhibit low proximity seeking, contact maintaining and contact resisting behaviors and tend to avoid their mothers upon a reunion following a brief separation. Securely attached babies exhibit high proximity seeking and contact maintenance (if distressed) and low proximity avoiding. Anxious/Resistant babies demonstrate high proximity seeking, contact maintenance and contact resisting, but low proximity avoiding (Waters, 1978). All attachment ratings used in the present investigation were obtained when the infants were 18 months of age. Situations were coded by experienced raters. Reliability at 18 months for 25 randomly selected subjects was .92.

Family Environment Scale. The Family Environment Scale (Moos, 1974) is a 90 item true-false test designed to tap various aspects of a family's social climate. Three dimensions are measured via 10 different subscales. They are the Relationship Dimensions (Cohesion, Expressiveness, Conflict), Personal Growth Dimensions (Independence, Active
Recreation Orientation, Intellectual Cultural Orientation, Achievement Orientation, Moral-Religious Emphasis) and System Maintenance Dimensions (Organization, Control).

Initially, 200 items were generated and administered to over 1,000 individuals in a sample of 286 families. Families were heterogeneous to ensure that the resulting scale would be appropriate to the broadest range of families. Various psychometric test construction procedures were used for final item selection. Internal consistencies were obtained by average item to subscale correlations and 8 week individual test-retests. These ranged from a low of .68 (Independence) to a high of .86 (Cohesion).

To ensure appropriateness for the current sample, a pilot study was conducted. Thirty-eight women attending the Mpls. Public Health Center's well baby clinics were requested to complete the FES while waiting to see the doctor. Subjects in this clinic were similar to the sample currently under investigation. Internal consistency reliabilities using Cronbach's Alpha were obtained for all scales. Results were as follows: Cohesion-.50, Expressiveness-.52, Conflict-.54, Independence-.71, Intellectual-Cultural Orientation-.50, Active Recreation Orientation-.55, Moral Religious Emphasis-.77, Organization-.68 and Control-.65.

Social Networks Inventory. The Social Networks Inventory was designed by the author for the current investigation and was based primarily on the Belle-Longfellow (1977) and the Pattison (1979) scales. Three basic dimensions of
social networks are measured: network size, network support and network density. The first subscale indicates the size of network in which the individual participates. The second subscale, network support, indicates the degree to which each subject, feels supported by her network. Density indicates how many individuals known to the subject are also known to each other. A high density rating means that most members know most of the other members. A low rating indicates the opposite.

In order to ensure that individual subscales were indeed measuring different characteristics, data were obtained from 41 women attending the Mpls. Public Health Clinic. This sample was chosen because of its similarity to the sample under investigation. Subscales were correlated using Pearson's product-moment correlational coefficient and were as follows: Support/Size=.16, (p=.156), Support/Density=.03, (p=.414), Size/Density=.05, (p=.370).

All network inventories were individually administered. Items were read to all subjects and responses recorded by the interview administrator.

A summary of instruments, their authors, and dates of administration may be found in Appendix B.
Data Analysis

In order to empirically test the proposed ecological model, a series of analyses is conducted. These analyses are aimed at assessing the effects of variables within their individual systems as well as within the total ecological model.

The ontogenic data here represents the personality traits of groups of abusing and nonabusing women. Theoretically, these data most closely reflect the emphasis on personality as represented by proponents of a psychiatric model of abuse. The assessment of early maltreatment empirically tests the often cited relationship between a mother's early experiences and the subsequent maltreatment of her own child.

The microsystem data represents the dyadic relationship between a mother and her child as well as the mother's perception of some broader characteristics of family functioning. The data in this system reflects a social-interactional view of abuse by considering how various characteristics of dyadic relationships may impact upon a potentially abusive situation.

The mesosystem in this investigation represents the impact of life stress and social networks on the quality of caretaking. Specifically, the frequency and intensity of changing life events, network support, size and density were chosen as variables representative of the mesosystem. This combination of variables most closely resembles a sociological model of abuse.
Individual systems analysis. The ontogenic data in this investigation represent the general personality types of women in this sample. Additional data collected within this system assess the quality of caretaking women experienced in their own childhood, i.e., whether or not she herself, was a victim of abuse.

Specifically, five personality measures were obtained: anxiety, aggression, defendence, impulsivity and succorance. The first analysis in the ontogenic domain is aimed at reducing these variables to a single factor. This is accomplished using a principal components factor analysis with varimax rotation. Data reduction was conducted for two reasons. First, the intent in this investigation was to obtain a general picture of personality, or a marker variable; not to explore individual characteristics of personality differences. Second, because of the relatively small number of subjects in the current sample, and the initially large number of total variables in all three systems, data reduction was necessary to conserve on the number of degrees of freedom.

The second analysis in the ontogenic domain is a step-wise multiple regression entering two variables; the personality factor and whether or not the mother was abused in her own childhood. The order of variable inclusion in the regression analysis is not specified. This method of regression allows the variable accounting for the most variance to be entered into the equation first, the variable accounting for the next highest amount of variance entered.
second, and so on. The advantage to this approach in the ontogenic domain is that it clarifies the relationship between personality variables, early abuse and the criterion measure. That is, it enables a comparison of the relative power of the personality variable with abuse in childhood.

The next analysis within this domain is a discriminant function analysis. While not truly a different form of analysis in this case, it affords another way of extracting additional information from this system and allows one to predict the criterion measure solely on the basis of personality and early treatment. It is also used as a basis for comparing predictability rates from the other two systems individually and then from the entire model.

The microsystem in this investigation represents two broad areas of family functioning. The first is the dyadic relationship between the mother and her child as measured by the attachment rating. The second area is concerned with the mother's perception of her family members and of the general family environment. Specific areas assessed include organization, conflict, expressiveness, control, independence, cohesion, orientations towards achievement, intellectual pursuits, recreation and religion.

The analysis of the microsystem data is similar to the analysis of the ontogenic data. The initial step is to reduce the ten subscales of the Family Environment Scale into a more manageable data set. Again, this is accomplished using an exploratory factor analysis with varimax rotation. The second step is entering the factors from the
factor analysis, along with the attachment data, into a stepwise multiple regression. Here, as in the ontogenic domain, the order of variable inclusion is not specified so that the variables may be allowed to enter the equation in order of their significance.

The third analysis within the microsystem is a discriminant function analysis. The advantage to a reanalysis of the same variance vis a vis a discriminant function analysis is that it enables a rate of prediction into the criterion groups based solely on the information from this system. It allows one to compare the differing rates of prediction between the microsystem and other systems.

The mesosystem here basically represents the impact of social networks and life stress on parent-child relations. Three basic characteristics of social networks are investigated: network size, support and density. These variables, along with the life stress data are entered into a stepwise multiple regression analysis. As with the other two regression analyses, the order of variable inclusion remains unspecified.

The last analysis in this system is a discriminant function. Again, the purpose is to discern the power of predictability of the mesosystem variables and compare the overall prediction rate with the overall prediction rates of the other two systems.

Ecological Systems Analysis. The next step in the analysis is the integration of the systems into a larger framework. All three systems are combined and subjected to
a stepwise multiple regression analysis, paralleling the analyses previously conducted on the systems individually. While the order of variable inclusion was again, left unspecified, the order of system inclusion was specified. In other words, in keeping with the ecological model, the ontogenic variables are entered first, the microsystem variables second and the mesosystem variables last. The purpose of this analysis is two-fold. First, it is to view the contributions of all variables in relationship to one another: Second, it is to see whether or not the variance accounted for by combining systems exceeds the variance accounted for by the systems individually.

The second analysis of the overall model is a discriminant function analysis. The purpose of this analysis is to determine whether or not the power of prediction into criterion groups can be improved upon by combining the information from all three systems.

**Descriptive Analyses.** The next series of analyses is designed to explore the differences on individual variables within domains between four previously defined groups: abused/abusing, abused/notabusing, not abused/abusing, not abused/not abusing. A two way analysis of variance controlling for the effects of maternal abuse was conducted on the following variables: hostility, family continuity, family rigidity, network size, network support, network density. Follow-up analyses of the significant F tests are conducted using Dunn's Multiple Comparison Test (or Bonferroni's t). This is the test most commonly used for planned, nonorthogo-
nal contrasts.

The purpose of these analyses is two-fold; first, to provide a richer description of the differences between women who were abused in childhood and those who were not; second, to better describe the other two anomalous groups, i.e., women who were abused and are not abusing and women who were not abused and are abusing.
Hypotheses are restated and results are presented first for each of the three individual systems: ontogenic, microsystem and mesosystem. Secondly, hypotheses and results of the integrated model are presented.

**Ontogenic**

Hypothesis 1: That personality and maternal abuse variables combined, will account for a significant amount of the variance within the ontogenic domain.

Hypothesis 2: That maternal abuse will account for more variance than the personality data.

Hypothesis 3: That a significant number of cases will be correctly classified into abusing and nonabusing groups solely on the basis of the ontogenic data.

The first variable in the ontogenic domain was whether or not the mother had been abused in her own childhood. Of the 107 women selected for the current investigation, 49 (46%) reported having been abused. While the rate of maternal abuse in childhood was expected to be high because of the at risk nature of the sample, a 46% rate becomes alarming especially in light of the stringent criteria used for selection. Women who reported incidences bordering on
maltreatment were excluded from the sample. This rate far exceeds the 1-2% generally cited for abuse in a normal population.

Of the 49 women who reported abuse, 38 (78%) of these were engaged in the maltreatment of their own children, while only 11 (22%) were not. A two dimensional chi-square revealed a highly significant (p=.001) relationship between the quality of care a mother received in her own childhood and the subsequent care she was able to give her child. Women who were abused were far more likely to mistreat their own offspring.

In order to reduce the ontogenic data into a more manageable form, a principal components factor analysis (varimax rotation) using the following variables was conducted on the entire sample: anxiety, aggression, succorance, impulsivity and defendence. A single factor solution was obtained.

The results including the factor loadings for the first principal component, are presented in Table 1. The decision to retain a one factor solution was based on several criteria. The first was an a priori decision to accept any factor with an eigenvalue greater than one. Second was the intent to obtain a marker variable of personality rather than detailed personality profiles. Lastly was the desire to conserve on the number of degrees of freedom for future analyses.

Women scoring high on this factor may be characterized as highly aggressive, hostile and irritable. They are
easily offended by other people's actions towards them and suspect that others are 'out to get them'. These women are highly impulsive and often express their emotions in a volatile fashion. This factor is hereafter referred to as the 'Hostility' factor.
Table 1

Subscale Statistics and Factor Loading Matrix of Ontogenic Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>X</th>
<th>SD</th>
<th>$h^2$</th>
<th>Factor 1 Loading</th>
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<tbody>
<tr>
<td>Anxiety</td>
<td>35.74</td>
<td>13.91</td>
<td>.16</td>
<td>.41</td>
</tr>
<tr>
<td>Aggression</td>
<td>7.52</td>
<td>3.58</td>
<td>.73</td>
<td>.86</td>
</tr>
<tr>
<td>Defendence</td>
<td>6.69</td>
<td>3.44</td>
<td>.63</td>
<td>.79</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>6.41</td>
<td>3.02</td>
<td>.54</td>
<td>.73</td>
</tr>
<tr>
<td>Succorance</td>
<td>8.21</td>
<td>3.54</td>
<td>.20</td>
<td>.44</td>
</tr>
</tbody>
</table>

Eigenvalues

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<tbody>
<tr>
<td></td>
<td>2.28</td>
<td>0.98</td>
<td>0.79</td>
<td>0.58</td>
<td>0.24</td>
</tr>
</tbody>
</table>
The second set of analyses within the ontogenic domain was designed to assess the relative contributions of both the maternal abuse variable and the personality factor to the criterion measure, i.e., whether or not the mother was abusing her child. This was done via a multiple regression analysis. In order to determine the F ratio and significance levels for individual variables, the following formula was used:

\[
\frac{R^2(\text{source})}{\text{df}(\text{source})} - \frac{1-R^2}{N-R-1}
\]

where \( R^2(\text{source}) \) = the change in \( R \) : \( \text{df}(\text{source}) \) = the number of degrees of freedom accounting for the change in the \( R \) : \( 1-R^2 = 1 - \) the \( R \) for the full model: \( N = \) Total number of independent variables in the model. (Kerlinger and Pedhazur, 1973).
Table 2

Multiple Regression Analysis for Ontogenic Variables:

Hostility and Maternal Abuse

<table>
<thead>
<tr>
<th>System</th>
<th>Variable</th>
<th>Mult. R</th>
<th>$R^2$</th>
<th>$R^2$ change</th>
<th>Simple R</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontogenic</td>
<td>Maternal Abuse</td>
<td>.5125</td>
<td>.2626</td>
<td>.2626</td>
<td>.51</td>
<td>34.55*</td>
</tr>
<tr>
<td></td>
<td>Hostility</td>
<td>.5140</td>
<td>.2642</td>
<td>.0016</td>
<td>-.12</td>
<td>.210</td>
</tr>
</tbody>
</table>

*p .000
As can be seen in Table 2, the maternal abuse variable accounted for almost all of the variance in the ontogenic system. As was expected in this sample, women who abused their children were most likely to have been abused in their own childhoods. The hostility factor in this investigation contributed little additional information to the overall understanding of who is likely to abuse their own child and who is not. The combined information from the ontogenic system accounted for 26% of the variance.

The results of this analysis support the first and second hypotheses in the ontogenic system. The combination of maternal abuse information and the hostility variable account for a significant amount of variance within this domain. Hostility contributed only negligibly; the most powerful variable was whether or not the mother was abused in her own childhood.

Additional information was sought to determine the power of prediction of the ontogenic domain alone. A discriminant function analysis was employed to determine the percentage of correct classification into one of two groups: abusing or not abusing. These results are given in Table 3.
Table 3

Discriminant Function Classification Results:
Ontogenic Domain

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>No. of Cases</th>
<th>Predicted Group Membership</th>
<th>Abusing</th>
<th>Not Abusing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abusing</td>
<td>51</td>
<td></td>
<td>37</td>
<td>14</td>
</tr>
<tr>
<td>Not Abusing</td>
<td>56</td>
<td></td>
<td>12</td>
<td>44</td>
</tr>
</tbody>
</table>

Percent correct classification = 75.70 (p = .000)
Using only the information from the ontogenic domain, it was possible to correctly classify 76% of the cases. Because of the power of the maternal abuse variable and the relative insignificance of the hostility variable, one may conclude that knowledge of the mother's treatment in her own childhood alone enables a significant rate of classification. These findings support the third hypothesis.

**Microsystem**

**Hypothesis 4:** That data obtained on the family environment, combined with the attachment ratings will account for a significant amount of variance within the microsystem.

**Hypothesis 5:** That a significant number of cases will be correctly predicted into abusing and nonabusing groups solely on the basis of microsystem data.

The first set of analyses on variables within the microsystem was a principal components factor analysis (varimax rotation) on all 107 subjects for the ten subscale scores on the Family Environment Scale. The subscales were as follows: Control, Expressiveness, Conflict, Independence, Achievement Orientation, Intellectual Cultural Orientation, Moral-Religious Emphasis, Organization and Control. Two factors were derived from this analysis. While the eigenvalues suggest the possibility of three principal factors, only the first two were considered interpretable. The first
factor, hereafter referred to as the Family Continuity Factor, describes a highly cohesive, independent and gregarious family system. Women scoring high on this factor viewed their families as highly supportive and committed to the welfare of the family. They saw family members as able to express their feelings in an open and honest fashion with a minimum of conflict or aggression. Family members were further characterized by their levels of independence, that is, were encouraged to be assertive, think for themselves and make their own decisions. In addition, these people were actively engaged in a variety of intellectual, cultural and/or recreational activities outside the family. Conversely, women scoring low on this factor viewed their families as minimally supportive and not very interested in, or committed to the family's welfare. They felt their members to be dependent on either themselves or others in the family for most of the their needs, and showed little interest or desire to participate in activities outside the family. Interactions were characterized by conflict, aggression and hostility.

The second factor is called the Rigidity factor. Women scoring high on this factor viewed their environments as much more constrained than those with low scores. Family members were considered highly competitive both with each other and with society in general. This competition was reflected especially in the hierarchical organization and 'pecking order' of its members. Religion was strongly emphasized and rules in the family appeared to be very
strict and inflexible. These results are presented in Table 4.
Table 4

Subscale Statistics and Factor Leading Matrix of Microsystem Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>X</th>
<th>SD</th>
<th>N</th>
<th>Family Cont</th>
<th>Rigidity</th>
<th>$H^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohesion</td>
<td>7.32</td>
<td>1.68</td>
<td>103</td>
<td>.63</td>
<td>.34</td>
<td>.65</td>
</tr>
<tr>
<td>Expressiveness</td>
<td>6.14</td>
<td>1.91</td>
<td>103</td>
<td>.74</td>
<td>-.07</td>
<td>.56</td>
</tr>
<tr>
<td>Conflict</td>
<td>3.26</td>
<td>1.96</td>
<td>103</td>
<td>-.41</td>
<td>-.22</td>
<td>.21</td>
</tr>
<tr>
<td>Independence</td>
<td>6.62</td>
<td>1.51</td>
<td>103</td>
<td>.52</td>
<td>.00</td>
<td>.27</td>
</tr>
<tr>
<td>Achievement Orient</td>
<td>4.85</td>
<td>1.94</td>
<td>103</td>
<td>.05</td>
<td>.58</td>
<td>.34</td>
</tr>
<tr>
<td>Int/Cult Orient</td>
<td>4.86</td>
<td>2.16</td>
<td>103</td>
<td>.59</td>
<td>-.03</td>
<td>.35</td>
</tr>
<tr>
<td>Active Rec Orient</td>
<td>5.13</td>
<td>2.47</td>
<td>103</td>
<td>.56</td>
<td>.25</td>
<td>.34</td>
</tr>
<tr>
<td>Moral Rel Emphasis</td>
<td>5.33</td>
<td>2.12</td>
<td>103</td>
<td>.21</td>
<td>.66</td>
<td>.48</td>
</tr>
<tr>
<td>Organization</td>
<td>5.51</td>
<td>2.23</td>
<td>103</td>
<td>.24</td>
<td>.80</td>
<td>.71</td>
</tr>
<tr>
<td>Control</td>
<td>4.77</td>
<td>1.94</td>
<td>103</td>
<td>-.42</td>
<td>.74</td>
<td>.74</td>
</tr>
</tbody>
</table>

Eigenvalues

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.84</td>
<td>1.87</td>
<td>1.25</td>
<td>0.92</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>0.67</td>
<td>0.55</td>
<td>0.50</td>
<td>0.29</td>
<td>0.28</td>
</tr>
</tbody>
</table>
The second set of analyses was designed to determine the relationship between having been abused in childhood and subsequent quality of attachment. This information, along with the results of the family environment data, reflect certain growth, relationship and system maintenance dimensions of the family as a unit as well as the quality of the mother's relationship with her child.

The attachment classifications, secure and anxious, were cross-tabulated with whether or not the mother had been abused in childhood. The hypothesis predicted that women who were abused would have significantly more anxiously attached children than those who were not abused. A Chi-Square analysis between groups yielded no significant differences between the abused and the not abused groups of women on quality of attachment. Therefore, the null hypothesis of no significant difference was not rejected. Having been abused in one's childhood bore no significant relationship to the subsequent quality of attachment between mother and child. There were significant differences however between groups for abusing and not abusing mothers. As was predicted, women who abused their children were significantly more likely to have children who were anxiously attached than women who did not abuse. Sixty percent of the women who were abusing had anxiously attached children versus forty percent who were not abusing (p=.04). While the quality of care received by the mother in her own childhood bore little relationship to the quality of subsequent attachment between her and her own child, the manner in which
she treated her own child was related to attachment.

The third set of analyses employed a multiple regression to assess the relative contribution of the two family factors and the attachment data to the outcome measure, i.e., whether or not the mother abused her child. These results are presented in Table 5.
Table 5

Multiple Regression Analysis for Microsystem:
Family Continuity, Rigidity and Attachment

<table>
<thead>
<tr>
<th>System</th>
<th>Variable</th>
<th>Mult. R</th>
<th>$R^2$</th>
<th>$R^2$ change</th>
<th>Simple R</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsystem</td>
<td>Family</td>
<td>.3589</td>
<td>.1288</td>
<td>.1288</td>
<td>.35</td>
<td>14.47*</td>
</tr>
<tr>
<td></td>
<td>Continuity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Family</td>
<td>.3630</td>
<td>.1317</td>
<td>.0029</td>
<td>-.05</td>
<td>.3258</td>
</tr>
<tr>
<td></td>
<td>Rigidity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attachment</td>
<td>.3631</td>
<td>.1319</td>
<td>.0003</td>
<td>.07</td>
<td>.0337</td>
</tr>
</tbody>
</table>

*p .01
The variable in this system responsible for the greatest contribution to the outcome measure was Family Continuity. Both the Rigidity factor and the Attachment data contributed little after Family Continuity was entered. The combination of these variables however, did account for a significant amount of the total variance, thus supporting the fourth hypothesis.

The fifth hypothesis was tested via a discriminant function analysis and was designed to predict group membership into either abusing or not abusing groups. These results are given in Table 6.
Table 6

Discriminant Function Classification Results

Microsystem Domain

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>No. of Cases*</th>
<th>Predicted Group Membership</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Abusing</td>
<td>48</td>
<td>Abusing 29</td>
<td>Not Abusing 19</td>
</tr>
<tr>
<td>Not Abusing</td>
<td>56</td>
<td>Abusing 13</td>
<td>Not Abusing 43</td>
</tr>
</tbody>
</table>

Percent of grouped cases correctly classified 69.23 (p = .007)

* 3 cases had at least 1 missing predictor variable.
Knowing the mother's score on the family continuity factor, rigidity factor and quality of attachment enabled a 69% rate of correct classification. Although this rate is lower than the percentage of correct classification from the ontogenic domain, this percentage still reflects a significant number of correctly classified cases, and supports the fifth hypothesis.
Mesosystem

Hypothesis 6: That network size, network support, network density and life stress account for a significant amount of variance in the mesosystem.

Hypothesis 7: That a significant number of cases will be correctly predicted into abusing and nonabusing groups solely on the basis of the mesosystem data.

Mesosystem variables were designed to measure three distinct aspects of social networks: network size, network support and network density (the percentage of persons knowing each other in the same network). Descriptive statistics for each variable for all subjects (N=107) are presented in Table 7.
Table 7

Descriptive Statistics for Mesosystem Variables on Total Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>X</th>
<th>SD</th>
<th>Range</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>13.02</td>
<td>6.90</td>
<td>4-33</td>
<td>104</td>
</tr>
<tr>
<td>Support</td>
<td>178.99</td>
<td>26.16</td>
<td>75.55-245.15</td>
<td>104</td>
</tr>
<tr>
<td>Density</td>
<td>.79</td>
<td>.17</td>
<td>.36-1.00</td>
<td>104</td>
</tr>
<tr>
<td>Life Stress</td>
<td>9.83</td>
<td>7.15</td>
<td>0-38</td>
<td>104</td>
</tr>
</tbody>
</table>
The first set of analyses for mesosystem variables assessed the relative contribution of each variable to the outcome measure, i.e., whether or not a woman was abusing her child. This was accomplished via a multiple regression analysis.

The variable accounting for the single most variance was Life Stress. The next most important variable was Network Size followed by Support and then Density. Life Stress in the Mesosystem accounted for as much variance as the maternal abuse variable accounted for in the ontogenic system. These results support the positive relationship between life stress and child abuse. That is, women who abuse their children tend to experience higher levels of life stress than those who do not. These findings also support the sixth hypothesis. Mesosystem variables account for a significant amount of variance. These results are presented in Table 8.
Table 8

Multiple Regression Analysis for Mesosystem Variables:

Network Size, Support, Density and Life Stress

<table>
<thead>
<tr>
<th>System</th>
<th>Variable</th>
<th>Mult. R</th>
<th>$R^2$</th>
<th>$R^2$ change</th>
<th>Simple R</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesosystem</td>
<td>Life Stress</td>
<td>.5098</td>
<td>.2599</td>
<td>.2599</td>
<td>-.50</td>
<td>34.19*</td>
</tr>
<tr>
<td></td>
<td>Size</td>
<td>.5183</td>
<td>.2690</td>
<td>.0091</td>
<td>.11</td>
<td>1.21</td>
</tr>
<tr>
<td></td>
<td>Support</td>
<td>.5201</td>
<td>.2705</td>
<td>.0014</td>
<td>.16</td>
<td>.186</td>
</tr>
<tr>
<td></td>
<td>Density</td>
<td>.5202</td>
<td>.2706</td>
<td>.0001</td>
<td>-.01</td>
<td>.013</td>
</tr>
</tbody>
</table>

*p .000
Next, as in the first two systems, a discriminant function analysis was conducted on the variables in the mesosystem to predict group membership - abusing or not abusing. Again, as with the ontogenic and the microsystem, this analysis was used to determine the predictive power of the mesosystem variables only. These results are presented in Table 9.
Table 9

Discriminant Function Classification Results:

Mesosystem Domain

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>No. of Cases*</th>
<th>Predicted Group Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abusing</td>
<td>51</td>
<td>32</td>
</tr>
<tr>
<td>Not Abusing</td>
<td>53</td>
<td>6</td>
</tr>
</tbody>
</table>

Percent of grouped cases correctly classified -75.96% (p = .000)

* 3 cases had at least one missing predictor variable.
The results given in Table 9 suggest that information from the mesosystem is valuable in predicting whether or not a mother will abuse her child. The most powerful predictor among this group of variables is the degree of change in life events, or life stress. A total of 75% correct classification was obtained from this analysis. Both mesosystem hypotheses were supported. The four mesosystem variables accounted for a significant amount of variance within the total system and a significant number of cases was correctly classified into the criterion groups.
An Integration

Hypothesis 8: That the combination of all systems into a regression analysis will account for more variance than the variance accounted for by any one system individually.

Hypothesis 9: That the rate of correct classification into abusing and nonabusing groups from the total model will exceed the rate of correct classification for any one system individually.

It is clear from the analyses of the individual systems that each one of them contributes a significant amount of information both to the overall understanding of abuse etiology, and to the ability to predict who may or may not end up abusing their offspring. However, the integration of this information is the next step towards a greater understanding of the abusive parent.

Belsky (1979) has elucidated a conceptual framework for abuse etiology based heavily on Bronfenbrenner's (1979) model of ecological development. From both of these theorists, this author has developed a third, empirically testable model where only systems in which the developing person is contained are considered. Three systems, the ontogenic, microsystem and mesosystem represent environments and interactions that all have a direct impact on the developing child. Variables believed to be representative of each sys-
tem were selected and investigated.

In order to investigate these systems, two series of analyses, paralleling the analyses done with the individual systems were conducted. The first was a multiple regression analysis entering variables and factors from all three systems. These results are presented in Table 10.
Table 10

Multiple Regression Analysis
Ontogenic, Microsystem and Mesosystem Data

<table>
<thead>
<tr>
<th>System</th>
<th>Variable</th>
<th>Mult. R</th>
<th>$R^2$</th>
<th>$R^2$ change</th>
<th>Simple R</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontogenic</td>
<td>Abused</td>
<td>.5124</td>
<td>.2626</td>
<td>.2626</td>
<td>.51</td>
<td>46.07***</td>
</tr>
<tr>
<td>Ontogenic</td>
<td>Hostility</td>
<td>.5140</td>
<td>.2642</td>
<td>.0015</td>
<td>-.12</td>
<td>.26</td>
</tr>
<tr>
<td>Microsystem</td>
<td>Continuity</td>
<td>.5699</td>
<td>.3248</td>
<td>.0606</td>
<td>.35</td>
<td>10.63*</td>
</tr>
<tr>
<td>Microsystem</td>
<td>Rigidity</td>
<td>.5730</td>
<td>.3283</td>
<td>.0035</td>
<td>-.01</td>
<td>.61</td>
</tr>
<tr>
<td>Microsystem</td>
<td>Attachment</td>
<td>.5737</td>
<td>.3291</td>
<td>.0008</td>
<td>.04</td>
<td>.14</td>
</tr>
<tr>
<td>Mesosystem</td>
<td>Life Stress</td>
<td>.6595</td>
<td>.4349</td>
<td>.1058</td>
<td>-.50</td>
<td>18.56**</td>
</tr>
<tr>
<td>Mesosystem</td>
<td>Support</td>
<td>.6640</td>
<td>.4408</td>
<td>.0059</td>
<td>.16</td>
<td>1.03</td>
</tr>
<tr>
<td>Mesosystem</td>
<td>Size</td>
<td>.6661</td>
<td>.4437</td>
<td>.0028</td>
<td>.11</td>
<td>.49</td>
</tr>
<tr>
<td>Mesosystem</td>
<td>Density</td>
<td>.6662</td>
<td>.4438</td>
<td>.0001</td>
<td>-.01</td>
<td>.01</td>
</tr>
</tbody>
</table>

*p .005
**p .001
***p .000
There are two basic advantages to taking all three systems and integrating them into a larger framework. The first is that the individual contributions of each variable may be seen in relation to the other variables. For example, the relatively large increases in the R Square change for the Family Continuity, Life Stress and Maternal Abuse variables account for more variance than, say for example, the Density variable which only has an R Square value of .0002. The second advantage is the ability to determine how much overall variance all three systems together can account for, and compare it to the amount of variance each individual system accounts for.

Before this comparison can be made however, some mention must be made of the problem of shrinkage of the multiple correlation. When beta weights have been determined on a single sample, as in this investigation, overestimation occurs because the zero order correlations are treated as though they were error free. The resulting R is an inflated estimate of the relationship between the independent and dependent variables. There are two ways to correct for inflation. One is a cross validation using another sample similar to the one currently under investigation. Because of the longitudinal nature of this study, the length of time the women have participated, and a lack of additional resources, cross validation in this case, is not possible.

The second method of correcting for an inflated R is by estimating the amount of shrinkage that would occur if this analysis and set of results were applied to another, similar
sample. The formula commonly used for correcting a biased estimate is:

\[ R^2 = 1 - \left(1 - R_0^2\right)^{N-K-1} \]

where \( R^2 \) = the estimated squared multiple correlation in the population; \( N \) is the sample size and \( k \) is the number of independent variables (Kerlinger and Pedhazur, 1973).

Recalling the results of the multiple regression analyses for each individual system (Tables 2, 5 and 8), we see that the ontogenic domain alone contributes 26% of the variance, the microsystem 13% and the mesosystem, 27%. When all three systems are considered together, however, 44% of the total variance is accounted for.

Correcting for inflation however by applying the above formula yields a square of .39. So when all three systems are entered into a single regression and square is corrected for inflation, 39% of the variance is still accounted for. This figure exceeds the amount of variance accounted for by any single system by 11% and strengthens the argument for investigations with a broader, more comprehensive range of variables. These results also support the need to integrate available information with new information when new theories of etiology are being built.

The second analysis aimed at integrating current information, again parallels the analyses conducted within
the individual domains. A discriminant function analysis entering all variables from all three systems was conducted. The purpose of this analysis was to see whether or not the predictive power of the individual systems could be improved upon by entering the variables and factors into a single discriminant function. In other words, could the information from the three domains better predict who may abuse and who may not abuse than each system individually. These results are presented in Table 11. Table 12 lists the results of the subsequent classification.
Table 11

Discriminant Function Analysis for
Ontogenic, Microsystem, and Mesosystem Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>Wilks Lambda</th>
<th>N</th>
<th>Sig</th>
<th>Stan. Discrim. Func. Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abused</td>
<td>.783</td>
<td>92</td>
<td>.000</td>
<td>.4068</td>
</tr>
<tr>
<td>Hostility</td>
<td>.768</td>
<td>92</td>
<td>.000</td>
<td>.0205</td>
</tr>
<tr>
<td>Family Continuity</td>
<td>.672</td>
<td>92</td>
<td>.000</td>
<td>.6836</td>
</tr>
<tr>
<td>Life Stress</td>
<td>.559</td>
<td>92</td>
<td>.000</td>
<td>-.3444</td>
</tr>
<tr>
<td>Network Support</td>
<td>.535</td>
<td>92</td>
<td>.000</td>
<td>-.6791</td>
</tr>
</tbody>
</table>

* 15 cases had at least one missing discriminating variable.
The four remaining variables, attachment, network size, rigidity, and network density contributed no additional discriminating power and therefore were automatically deleted from the analysis.
Table 12

Discriminant Function Classification Results for Ontogenic, Microsystem, and Mesosystem Data

<table>
<thead>
<tr>
<th>Actual Group</th>
<th>No. of Cases*</th>
<th>Predicted Group Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Abusing</td>
<td>Not Abusing</td>
</tr>
<tr>
<td>Abusing</td>
<td>41</td>
<td>35</td>
</tr>
<tr>
<td>Not Abusing</td>
<td>51</td>
<td>7</td>
</tr>
</tbody>
</table>

Percent of grouped cases correctly classified: 85.87%

* 15 cases had at least 1 missing discriminant variable.
Upon reviewing the results from Table 12, it is clear that combining the information from all three systems enables a much higher rate of correct classification than regarding any one system individually. Recalling the results from the individual systems (Tables 3, 6 and 9), we see that a combination of all three systems is much more powerful. The ontogenic information correctly classified 76% of the cases: the microsystem 69% and the mesosystem, 76%. The integration of three systems increased the rate to 85%. Again, these results support the need to continue a broad range of investigation. This is particularly important for clinicians and service delivery systems in need of better tools to assess the likelihood of an abusive outcome.

**Descriptive Analyses**

The results of the previous analyses strongly support the often cited relationship between having been abused in one's childhood and the probability of subsequently abusing one's offspring. But more information is needed to determine how groups of abused and not abused women differ. Further, little is known of women who were abused themselves, yet are capable of adequately caring for their own children; or of women who were not abused yet are guilty of maltreatment. In short, women who were abused would be 'expected' to abuse and those who were not abused, would be 'expected' to deliver adequate care. Why then are there abused women giving adequate care and conversely, not abused women guilty
of maltreatment?

Hypothesis 10: Women who abuse their children are significantly more likely to have been abused in childhood than women who do not abuse.

Hypothesis 11: Women who abuse their children seek more sympathy and reassurance, are more aggressive, impulsive, suspicious and anxious than women who do not abuse.

Hypothesis 12: Women who abuse their children are more likely to have children who are anxiously attached to them than those who do not.

Hypothesis 13: Women who abuse their children view family members as more dependent, higher on conflict, lower on expressiveness and participating in fewer activities.

Hypothesis 14: Women who abuse their children have smaller networks and feel less supported by their networks than those who do not abuse.

Hypothesis 15: Women who abuse their children are higher on life stress than those who do not abuse.

In an attempt to answer these questions and to provide a richer description of both abused versus not abused women
and abusing versus non-abusing women, two way analyses of variance were conducted on all variables except the attachment data which is nominal in nature. (Summary Anova Tables may be found in Appendix A). Follow-up tests for significance were conducted using Dunn's Multiple Comparisons Test (or Bonferonni's t). This is the most common test used for planned nonorthogonal contrasts.

The first comparison for each variable tested differences between the abused and not abused groups, regardless of how they were treating their own children. The second, tested differences between abusing and non-abusing mothers regardless of how they were treated in childhood. These results are presented in Table 13.
Table 13

Planned Comparisons Between Abused and Not Abused Mother Groups:
Abusing and Not Abusing Mother Groups on
Ontogenic, Microsystem, and Mesosystem Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group 1 (N=49)</th>
<th>Group 2 (N=56)</th>
<th>Group 3 (N=52)</th>
<th>Group 4 (N=55)</th>
<th>Contrast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Abused</td>
<td>Not Abused</td>
<td>Abusing</td>
<td>Not Abusing</td>
<td></td>
</tr>
<tr>
<td>Personality</td>
<td>52.45</td>
<td>48.24</td>
<td>51.73</td>
<td>48.71</td>
<td>Grp 1 vs. Grp 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 3 vs. Grp 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 1 vs. Grp 2*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 3 vs. Grp 4*</td>
</tr>
<tr>
<td>Continuity</td>
<td>47.19</td>
<td>52.18</td>
<td>45.77</td>
<td>53.34</td>
<td>Grp 1 vs. Grp 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 3 vs. Grp 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 1 vs. Grp 2*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 3 vs. Grp 4*</td>
</tr>
<tr>
<td>Rigidity</td>
<td>49.34</td>
<td>50.48</td>
<td>50.63</td>
<td>49.52</td>
<td>Grp 1 vs. Grp 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 3 vs. Grp 4</td>
</tr>
<tr>
<td>Network Size</td>
<td>13.25</td>
<td>13.62</td>
<td>13.10</td>
<td>13.74</td>
<td>Grp 1 vs. Grp 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 3 vs. Grp 4</td>
</tr>
<tr>
<td>Support</td>
<td>169.85</td>
<td>185.80</td>
<td>173.98</td>
<td>182.69</td>
<td>Grp 1 vs. Grp 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 3 vs. Grp 4</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>Grp 1 vs. Grp 2*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 3 vs. Grp 4*</td>
</tr>
<tr>
<td>Density</td>
<td>.76</td>
<td>.81</td>
<td>.80</td>
<td>.79</td>
<td>Grp 1 vs. Grp 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 3 vs. Grp 4</td>
</tr>
<tr>
<td>Life Stress</td>
<td>13.56</td>
<td>6.72</td>
<td>13.85</td>
<td>6.19</td>
<td>Grp 1 vs. Grp 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 3 vs. Grp 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 1 vs. Grp 2*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grp 3 vs. Grp 4*</td>
</tr>
</tbody>
</table>

*p .05
No significant differences were found on the hostility factor, the rigidity factor, network size, support or density for any of the comparisons. There were significant differences however between abused and not abused groups on family continuity, network support and life stress. For abusing and not abusing groups, the differences occurred again on both the family continuity factor and life stress.

Women who were abused in their own childhoods viewed their current family members as dependent, largely unable or unwilling to think for themselves and uninterested in participating in activities outside the home. Family members were low on expression of feelings and high on conflict. Interactions were characterized as generally hostile and aggressive. These same findings were true when abusing and non-abusing groups were compared. Women who were abusing viewed their families much the same as the abused group did. They too, saw their families as dependent, unable to express themselves and high on conflict. These findings support earlier investigations, particularly from the psychiatric orientation, that women who abuse have a difficult time with the dependency needs of their children.

In terms of network support, significant differences were found between the abused and the not abused groups. Women who had been abused in their own childhoods felt significantly less supported than women who were not abused. Interestingly, no differences were found between the abusing and not abusing groups. This lack of differences between the latter two groups apparently does not support the
hypothesis that women who abuse their children feel less supported by their networks than those who do not. Combining this information with the lack of differences in the network size suggests that abusing mothers may not be particularly isolated. They list similar numbers of people as important and report minimal difficulty getting help with daily tasks. Social isolation may have been better investigated by looking at specific interactions including frequency of interaction as well as satisfaction with the contacts that were made.

As expected, women who abused their children scored significantly higher on life stress than their non-abusing counterparts. The differences in life stress held true for the abused women as well, where abused women experienced significantly higher levels of life stress than non-abused women.

The next set of comparisons was designed specifically to obtain more information on the two anomalous groups, i.e., women who were abused and who were not abusing and women who were not abused but engaged in the abuse of their child. The first contrasts tested differences between groups of abused/abusing (AA) mothers versus abused/not abusing (AB). The second contrast tested differences between not abused/abusing (BA) versus not abused/not abusing (BB). These results are presented in Table 14.
Table 14

Planned Comparisons Between AA vs. AB and BA vs. BB

for Variables in the Ontogenic, Microsystem and Mesosystem

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group AA</th>
<th>Group AB</th>
<th>Group BA</th>
<th>Group BB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=38</td>
<td>N=11</td>
<td>N=14</td>
<td>N=44</td>
</tr>
<tr>
<td>Abused/</td>
<td>Abused/</td>
<td>Not Abused/</td>
<td>Not Abused/</td>
<td>Not Abused/</td>
</tr>
<tr>
<td>Abusing</td>
<td>Not Abusing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personality</td>
<td>52.91</td>
<td>51.24</td>
<td>48.87</td>
<td>48.06</td>
</tr>
<tr>
<td>Family Cont</td>
<td>45.75</td>
<td>50.98</td>
<td>45.83</td>
<td>53.95</td>
</tr>
<tr>
<td>Rigidity</td>
<td>49.73</td>
<td>48.31</td>
<td>52.80</td>
<td>49.83</td>
</tr>
<tr>
<td>Network Size</td>
<td>13.17</td>
<td>13.45</td>
<td>12.92</td>
<td>13.81</td>
</tr>
<tr>
<td>Network Sup</td>
<td>168.12</td>
<td>175.20</td>
<td>189.30</td>
<td>184.70</td>
</tr>
<tr>
<td>Network Den</td>
<td>.77</td>
<td>.74</td>
<td>.86</td>
<td>.90</td>
</tr>
<tr>
<td>Life Stress</td>
<td>15.62</td>
<td>7.18</td>
<td>9.23</td>
<td>5.93</td>
</tr>
</tbody>
</table>

Contrast:
- Grp AA vs. Grp AB
- Grp BA vs. Grp BB
- Grp AA vs. Grp AB* (p < .05)
- Grp BA vs. Grp BB

*p < .05
There were two significant contrasts from these analyses. Women who were not abused but abusing their children scored significantly lower on the family continuity factor—than women who were not abused and not abusing. Given a group of women who were not abused in their childhoods, those who end up abusing their children may be those who perceive their families as dependent, unassertive and apathetic about the family's welfare. This lack of enthusiasm both for personal growth and exploration of the world around them (vis-a-vis a lack of interest in activities outside the family), may increase maternal feelings of resentment and hostility and trigger a violent reaction to family demands.

The second significant difference was found on life stress between women who were abused/abusing and abused/not abusing. The latter group scored significantly lower on life stress than the former. This suggests that for women who were abused in childhood, stress may have a particularly negative effect on their caregiving skills. This seems to be supported by a lack of differences on the same variable for not abused/abusing versus not abused/not abusing contrast. As is evident from Table 13, women who were abused reported significantly higher levels of life stress than those who were not abused. The ultimate link between stress and abuse may be how the mother was treated in her own childhood. As it appears, stress is a mediating factor if one were an abuse victim as a child: it does not appear particularly powerful however, if the mother was not abused.
Summary of Results

The results were analyzed and presented according to each of the defined systems of the ecological model.

The ontogenic domain, representing the personal growth and development of the mother, yielded several findings. First, the relationship between having been abused in one's childhood and subsequent maltreatment was firmly established in this high risk sample. Of the 49 women who reported having been abused in childhood, 38 (78%) were abusing their own children.

Second, contrary to many of the earlier findings and clinical observations, women who abused their children did not differ significantly from their non-abusing counterparts on a series of personality variables. Specifically, they were not more aggressive, impulsive, hostile or suspicious nor were they more anxious.

Next, whether or not the mother was abused in her own childhood proved to be the most powerful predictor variable in this domain. Based primarily on knowing how the mother was treated in her own childhood, a 76% rate of correct classification was possible.

The microsystem represented a series of dyadic relationships within the family including the mother's relationship with her child. Unlike the predictive power of maternal abuse in the ontogenic domain, maternal abuse in this system had no bearing on the quality of attachment. There were no significant differences between abused and not abused women on the secure and anxious attachment groups.
There were differences however on the abusing and not abusing groups. Sixty percent of women who were abusing had anxiously attached children versus forty percent who were not abusing.

Significant differences were found on the family continuity factor, an empirically derived score from the subscales of the Family Environment Scale. The family continuity factor assesses the degree of a family's cohesion and supportiveness, independence, gregariousness and expressive ability. This construct accounts for the most variance in the microsystem, and in this domain, is the most powerful predictor of whether or not a woman will abuse her child. A 69% rate of correct classification was possible from microsystem information.

There were also significant differences on the family continuity factor between the not abused/abusing and not abused/not abusing groups with the latter scoring significantly higher indicating to a certain degree, a healthier family system.

The mesosystem assessed both the mother's social network and her level of stress. The variable accounting for the most variance in this system and also the best predictor, was life stress. A 76% rate of correct classification was possible with mesosystem variables alone.

Significant differences were found on the network support variable between women who were abused and those who were not. Surprisingly, there were no differences on this variable for the abusing and not abusing groups. Apparently
this fails to support the hypothesis that abusing women are isolated. However, the support measure in this study was a very crude estimate of network support and did not address qualitative issues regarding relationships. This will be discussed at greater length in the next section.

The differences between abused versus not abused groups and abused/abusing versus abused/not abusing groups supports the accepted view of stress as a mediating variable in abusive situations. However, in this sample, significant differences on levels of stress were found only for those women who were abusing and abused. There were no differences for women who were abusing and not abused when compared with their not abused/not abusing counterparts.
CHAPTER 5
DISCUSSION

The purpose of this investigation was to empirically test a theoretical model of child abuse based on an ecological model rooted in Bronfenbrenner's (1979) work, advanced in the area of child abuse by Belsky (1980), and further developed by this author to reflect a limited number of levels influencing the mother-child relationship. The ecological model directly addresses the contexts in which individuals function. In this investigation, contexts were confined to those in which the mother and her child were direct participants.

The first context focused on the mother's development in her own childhood and addressed various personality variables as well as the quality of care she received as a child; specifically, whether or not she had been abused. These variables constituted the ontogenic domain.

Perhaps the most surprising result in this domain was that 46% of the women reported being abused in childhood. This estimate, if anything, is a conservative figure given the stringent criteria used for classification. Women who reported incidences that bordered on abusive treatment were eliminated from the investigation. No doubt this percentage would have approached or exceeded the 50% mark had all the women discussed their childhoods with equal candor. Despite longstanding relationships with their testers, many chose to refrain from revealing sensitive information about their
upbringing. Of the 49 women who reported childhood abuse, 38, or 78% were engaged in similar abuse of their own children. Only 11, or 22% of the women who were abused were providing adequate care. These results strongly support the often cited relationship between early childhood experiences and later parenting practices (Kempe et al, 1962; Oliver and Cox, 1975; Steele and Pollock, 1968). The trend in this sample was predictable from the literature: Women who abused their children were likely to have been victims of abuse themselves. This finding must, however, be interpreted with caution for several reasons. First, all of these women were at risk for abuse when they were enrolled in the longitudinal investigation, so a proportionately higher number of abusers was expected. Second, the range of SES in this sample was somewhat restricted thereby limiting the generalization of these results to other populations. A majority of the women came from lower income backgrounds: Generalizing to upper and middle income groups, therefore, is unwise. On the one hand, these findings support Pelton's (1979) claim that abuse is a function of poverty and is not necessarily as rampant among middle and upper SES groups. On the other hand, little information is available on abusive parents in the upper SES groups (Papatola, 1980), so a legitimate comparison between the two groups would be difficult to draw. Lower income women may, as many have suggested, simply have been more accessible for investigative purposes (Gil, 1979; Gil, 1977; Jaraytane, 1977; Papatola, 1980) through welfare rolls, public assistance records, etc.
While the relationship between early abuse and subsequent maltreatment was firmly established in this investigation, the relationship between abuse and maternal personality variables was less clear. No significant differences were found between abused and not abused women, and perhaps more significantly, between the four previously defined groups: abused/abusing, abused/not abusing, not abused/abusing and not abused/not abusing. This lack of differences was surprising given that the bulk of the literature indicates that women who abuse their children tend to exhibit higher levels of impulsivity and aggression than women who do not abuse (Boisvert, 1972; Lynch, 1977; Steele and Pollack, 1968; Yelaja, 1977).

One hypothesis for the lack of differences in this investigation is that the relatively small number of subjects in the overall sample, and especially the two anomalous cells, precluded detection of differences. A second explanation assumes that the lack of differences between groups on personality variables is true, in which case, a somewhat different interpretation of the role of personality is necessary. Personality development itself, is no doubt, mediated by the quality of care received in childhood (Clarke-Stewart, 1973; Schaeffer, 1977). If women who abuse their children were indeed victims of similar treatment, the differences in observed personalities may, in reality, mirror differences in early care. In other words, abusive women may not necessarily be more aggressive, hostile or impulsive. They may simply be reflecting or replaying the
experiences they had with their own parents; modeling a restricted range of responses to parent-child interaction. Of course this explanation does not account for the women who provide adequate care. But perhaps the explanation for this group does not lie within the realm of the ontogenic domain, or with personality differences. The micro and mesosystems discussed in the next sections may prove more fruitful.

The next series of analyses addressed the dyadic relationships of the mother with her child and the mother with the rest of her family. While the mother's relationship with her own parents was highly predictive of how she would eventually care for her own child, it was not predictive at all of the quality of attachment that would develop between her and her child. The expectation that abused women would have had a higher rate of anxiously attached children was not supported. It is still unclear at this point, what types of intervening variables mediate between abuse and attachment, but clearly, the quality of early treatment alone, does not significantly affect later parenting skills.

Women who were abusing their children did have more anxiously attached children than non-abusing women. As attachment is a relationship that develops over time, it cannot be the result of a single traumatic episode (Ainsworth, 1978). Many components of both the mother and the child's behavior combine to influence the quality of attachment. One of the most prominent characteristics of mothers with securely attached babies is the consistency of
response. These women are able to quickly assess the infant's needs and to provide the necessary contact for comfort. This is not true of women who abuse their children. While they may occasionally be capable of gauging their child's needs, this is not a consistent mode of interaction (Clarke-Stewart, 1973; Waters, Egeland & Vaughn, 1980; Waters, 1978). So one explanation for the differences in attachment is that mothers who abuse their children are not capable of assessing infant demands and meeting infant needs. Apparently, the ability to gauge a child's needs adequately enough to ensure a secure attachment is not especially influenced by how a mother was herself treated in childhood. Again, this is evident from the lack of differences between abused and not abused women on the attachment ratings. The information needed to provide adequate care may not necessarily come from an individual's relationship with her mother. This type of information may have been provided by another stable adult figure while the child was growing up, for example, a grandmother, an older sibling or an aunt. Experiences with peers and/or social networks of the various family members may also have had a positive impact on later parenting skills.

The relationship between the mother and her child may be clarified somewhat by looking at the mother's perception of, and relationship to, her family as a whole vis-a-vis the family continuity factor. This factor, previously described, represents both the type and the quality of family interaction. Mothers who abused their children were much
more likely to see their families as dependent, unable to express themselves and higher on conflict than women who did not abuse. Speaking therapeutically, these women seem to be projecting their thoughts and feelings about themselves onto their current family situations. The feelings of dependency needs never met, anger never confronted and the pervasiveness of hostility and conflict typify these women's perceptions of their own families. If a woman is viewing her child in a manner similar to how she thought her parents viewed her, it stands to reason that her frustrations with her child may stem from similar unrealistic expectations of a child's capabilities.

Abusing families also participated in fewer activities outside the home and demonstrated less embeddedness in society in general. These families may be visualized as a tight knit circle with a thick, almost impermeable ring around the external boundary. All families have boundaries (Bowen, 1976), but abusing families seem to have especially rigid boundaries between themselves and the world outside. Because few contacts outside the home are made, and few members participate regularly in community activities, there is no outward directedness of energy: All the energy remains inside the parameters of the boundary. With no external outlet or pressure valve, the normal everyday conflicts build, generate friction and increase the probability of violence.

The mesosystem variables attempted to specifically assess the relationship between the mother, her social net-
work and life stress. As expected, women who abused their children had higher life stress scores than those who did not. These results support similar findings demonstrating the relationship between abuse and life stress (Justice and Duncan, 1975; Justice and Justice, 1976; Kempe and Kempe, 1978).

Interestingly however, when the groups were broken down into the two categories of maternal abuse (yes and no) and two categories of abusing (yes and no), stress differences were significant only for women who had been abused. Women who were not abused, but abusing their children did not demonstrate significantly higher levels of stress than those not abused and not abusing. In other words, given a group of women who were not abused themselves in childhood, there were no differences in stress levels between the abusing and the nonabusing mothers. So abusing mothers in this subgroup did not have higher stress levels than nonabusing mothers. These findings are markedly different from the results of the same comparisons on women who were abused. Abused women who abused their children had significantly higher stress scores than abused women who were not abusing.

The second major finding among the mesosystem variables was that women who abuse their children were not especially isolated. This was somewhat surprising as much of the literature dealing with the sociological aspects of abuse cite abusing mothers as socially isolated (Elmer, 1967; Garbarino and Stocking, 1980; Gray, Cutler, Dean and Kempe, 1979; Rosenfeld and Newberger, 1978; Young, 1964). In this sample
however, isolation was measured by the numbers of persons each mother listed as important: These women were easily able to generate lists of significant persons. The mean number of persons did not differ significantly between the abusing and the nonabusing groups.

While there were no differences in network size between groups, significant differences were found on the network support variable but not between the expected groups. Women who were abusing their children were expected to feel less supported than women who were not abusing (Caplan, 1974; Gottlieb, 1980). This was not the case. Women who had been abused in childhood however, felt significantly less supported than those who had not been mistreated. While abused women enumerated the same number of important persons, they seemed less able to elicit the type of support that could be instrumental in lessening the burden of daily tasks. While life stress may be an important component in the etiology of abuse, it appears to be especially crucial for those women who themselves were abused.

There are several hypothetical explanations for why this may be so. First, women who were victims of abuse may, as suggested earlier, have a limited repertoire for responding to a wide range of life events. Second, women who were abused may simply perceive their life experiences as more traumatic and disorganized. Third, women who were abused may feel that they have little or no control over what happens to them, and that any attempt they make to change their current situation is hopeless. They may have learned to be
helpless (Seligman, 1976). As abuse victims themselves, it is possible that these women felt unable to impact any change in their own lives as children. The same feelings of helplessness recur in adulthood and fuse with the chaos. Frustration sets in and violence results.

Thus far, the discussion has related findings of the current investigation primarily by system. These findings parallel results from the three main abuse orientations: psychiatric (ontogenic), sociological (mesosystem) and social interactional (microsystem). The integration of these systems is the last step towards demonstrating the advantages of considering a multiple range of influences for abuse etiology.

First, the superiority of an integrated model is clear from the amount of variance one is able to account for among all three systems. A total of 39% of the variance may be accounted for when all systems are regarded together. This percentage reflects an increase of at least 11% over the systems when viewed individually.

Second, the rate of prediction into abusing and not abusing groups increased when all three systems are integrated. The prediction rates have a special significance for clinicians and service delivery persons. If the most predictive pieces of information can be obtained from women early in their pregnancies, prevention, in the form of education programs may be possible. Women may be taught to decipher a child's dependency needs as normal and may be taught to monitor her own feelings of possible anger and
rage towards those needs. New mothers may be taught appropriate expression of those feelings in a way that would allow them to release tension and in a manner that would not be harmful to their children.

Third, integrating information from all three systems provides clarification for some of the more traditionally held views of abuse, and enables the weaving of a tapestry so to speak, with a somewhat different texture. For example, earlier investigations and clinical observations of abusive mothers suggest that they are more aggressive, hostile, and impulsive than those who don't abuse. This investigation does not support that idea. There were no differences between women who were abusing their children and those who were not on a series of personality variables. Nor were there any differences between women who had been abused in childhood and those who had not. What was significant, however, was the relationship between having been abused and the likelihood of subsequent abuse. One explanation for the results of earlier investigations that suggested abusing women were more impulsive, aggressive and hostile may be the contribution of maternal abuse to individual personality development. That is, none of the earlier investigations, to this author's knowledge, systematically inquired about the quality of the mother's treatment in her childhood. The reported differences may not truly have reflected disparities in personality as much as they reflected the effects of having been mistreated in childhood. The results of this mistreatment may indeed promote
aggressive and hostile behavior in adulthood.

Another example of clarifying a traditional view is the relationship between life stress and abuse. Several investigators (Egeland, Breitenbucher & Rosenberg, 1980; Justice and Duncan, 1976; Justice and Justice, 1976) have cited higher life stress levels in abusing women than in non-abusers. It is true that when abusers and non-abusers are compared for stress levels without reference to how the mother was treated in childhood, abusers are higher on stress. However, when further comparisons are made and maternal background is considered, a somewhat different picture emerges. Women who were abusing their children but were not abused themselves demonstrated similar levels of stress as their not abused/not abusing counterparts. Women who were abusing their children and were abused in childhood demonstrated significantly higher levels of stress than those who were not abused and not abusing. So, while stress still appears to be a moderator variable for abuse, it seems to have more impact on women who were abused than those who were not. This is an important distinction because it begins to narrow the focus and better define for whom high stress levels are an added liability. In this sample, abused women may simply be more vulnerable to the impact of changing life events and therefore may need to learn additional coping strategies.

A similar situation emerges from the results of the family continuity analysis. Both the abused and the abusing groups scored significantly lower on the continuity factor
than the not abused, and the not abusing groups. When further comparisons are made between groups and maternal background is considered, once again, a different picture emerges. The differences between the abused/abusing and abused/not abusing group are not significant. That is, given maternal abuse as a constant, both abusers and non-abusers view their families similarly with regards to continuity. There were differences, however, between women who were not abused/abusing and the not abused/not abusing counterparts. The abusing women in this contrast viewed their families as more dependent and less supportive and obtained almost identical scores as a group as the abused/abusing women.

As significant differences between groups aid in the clarification of certain traditionally held relationships, so too do the lack of differences. For example, the bulk of the literature supports the relationship between social isolation and abuse (Castle, 1976; Elmer, 1976; Garbarino and Stocking, 1980; Young, 1964). When the individual networks of women who abuse their children were compared with those who did not, no significant differences were noted in size, density or support. The hypothesis that abusing women would feel less supported by their networks and have fewer friends was unfounded. This apparently suggests that networks and support systems may not be as influential as once hypothesized. However, this lack of differences is challenged by the results of the Continuity factor. Recall that women who abused scored lower on this factor, indicating less movement.
between family and society. If a family remains within its own confines and is influenced by little else save its own members, the degree of network support sought is probably not very high. The problem with the network variables in this investigation may have been a lack of specificity. While the support variable was based on several items from a standardized questionnaire, the questions themselves addressed the degree of difficulty women had in securing help with daily tasks. They did not address more qualitative issues such as the level of satisfaction associated with those contacts. The quality of network interactions needs to be investigated in later research efforts if the role of networks is to be better understood.

Although there were no differences between any of the groups on network density all groups had very dense networks. That is, most people knew each other within the network. This finding was expected and supports the relationship established in previous investigations between density levels and SES. That is, lower income individuals exhibit higher density among network members because many members take on multiple roles such as friend, cousin, mother, boyfriend, etc. (Caplan, 1974; Cubitt, 1973; McCallister and Fischer, 1978). That relationship is supported in this investigation, but the ultimate link between density and support is still unclear and needs further investigation.

**Directions for Future Research**

Research in the area of child abuse has traditionally been framed within one of three basic models of etiology:
psychiatric, sociological and social interactional. This investigation however theoretically integrates these systems into a single ecological model. The results of integrating these into a single inclusive framework indicate that continued exploration using an ecological model as a theoretical base for future research is a fruitful direction.

Although variables in this study were selected to represent each of the defined systems, the number of variables in each domain needs to be vastly increased. For example, additional personality variables such as self concept and depression could be added to the ontogenic domain, enriching our understanding of the role of personality in abuse.

In addition to increasing the numbers of variables, more sensitive instruments need to be developed to better ascertain the impact of certain variables. For example, a much more comprehensive interview needs to be incorporated for the investigation of social networks. Interactions between network members need to be assessed for both frequency and quality of contact. The level of satisfaction attained in participating in a given network needs to be established. Asking how networks are supportive, and more importantly, how they are not supportive, is the first step in defining qualities of support systems that would increase our understanding of their capabilities and functions. In general, a much more comprehensive assessment regarding the structure and function of networks needs to be incorporated into future research.

One of the major criticisms of abuse research has been
the retrospective nature of a great deal of the investigations. That is, events (such as abuse) are studied after they have occurred. This is problematic for two reasons: the first is the problem with self report in general. Individual exaggeration, omitting information, or worse yet, the refusal to discuss sensitive information prohibits the gathering of 'clean' data. The second is that the use of self report as a sole measure of activity precludes the use of observational information. For these reasons, a prospective approach remains the best choice for continued investigation in this area.

Using an at risk methodology means that although a higher percentage of persons will become abusers, many will not. This latter group provides an excellent comparison group. In addition, early background can be used to provide a richer description of both groups. By considering women with common histories and comparing common histories with abusive outcomes, we are better able to understand how certain variables impact different groups.

The ultimate goal in abuse research is to determine which combination of variables interacts to produce an abusive situation. Because of the uniqueness of human development, human response and individual behavior, we may never be able to predict outcomes for all individuals. But additional information from case studies may enable a better understanding of the probability for abuse and ultimately, better plans for intervention. The incorporation of such information with known data from group studies, serves as
the best combination of tools to predict, educate and eventually prevent maladaptive parent-child interaction.
Limitations

There are three specific areas of limitation within the current investigation. The first addresses internal validity; the second is concerned with external validity, or the degree to which these results may be generalized. The third limitation centers on problems inherent to the development of a new model.

Perhaps the most significant concern with regards to internal validity is the issue of self report. In this study, women were asked highly personal questions regarding the quality of care they received in childhood. This was done in an attempt to assess whether or not women had been victims of abuse. Despite the familiarity of each mother with her tester, not all subjects responded with equal candor. This of course, leads to the possibility of misclassification into the abused or not abused groups. Many of these women were eliminated from the study because of the vague quality of response. However, this leaves a question as to the true numbers of mothers who were abuse victims.

Generalizability of the results from this study is limited to those groups bearing a strong resemblance to the current sample. Young, lower SES women having their first child characterize this group. It would be difficult to generalize to other groups, especially other socioeconomic groups. Very little empirical research has been conducted on middle and upper income women with regards to abuse. Because little is known about maladaptive patterns in the middle and upper
groups, comparisons at this point, would be moot. The danger is generalizing rests in the fact that income alone may account for vast group differences. For example, middle income women generally have much greater mobility and access to a wider range of activities. Hypothetically, this expands their range of support and affords them opportunities for social ties not available to their lower income counterparts. This in turn, may have a large effect on the perception of life events and subsequent life stress. Because of a broader range of support, middle income women may perceive their experiences as less debilitating and therefore less able to influence the parent-child interaction.

Clearly however, some of the most severe limitations stem from the inherent difficulties in the development of any new schema or paradigm. This investigation represents the initial step in reorganizing abuse data into one encompassing model. Its purpose was to serve as a foundation for future inquiry and experimentation.

Future investigations may begin by refining and reorganizing data in the three current systems. The addition of more variables to each of the systems may continue to test both the power of individual variables as well as combinations of them. The truly ambitious will move on to the task of conceptualizing, defining, operationalizing and measuring variables within the exosystem and the macrosystem.

Finally, if a model is to hold true for more than just a select group, data from a broader range of mother-child pairs
must be gathered and tested to determine the overall robustness of the model.
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Disbrow, Mildred; Doerr, Hans and Caulfield, Colleen. Meas-


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Appendix A
### Table A

Two Way Analysis of Variance
Variable: Family Continuity

<table>
<thead>
<tr>
<th>Source</th>
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<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
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<tr>
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<td>577.36</td>
<td>6.35</td>
<td>.013</td>
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<tr>
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<td>471.25</td>
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<td>90.92</td>
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Two Way Analysis of Variance
Variable: Network Support

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Table C
Two Way Analysis of Variance
Variable: Life Stress

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<td>9/80-6/81</td>
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</table>

- <sup>a</sup> administered at either 42 or 48 month testing
- <sup>b</sup> administered at 3 month testing
- <sup>c</sup> administered at 42 month visit
- <sup>d</sup> administered at 24 month visit
Maternal Early Treatment
SUPPLEMENT TO 42 AND 48 MONTH INTERVIEWS

The questions should be inserted into the interview in the following manner:

42 Months: After question number 14.

48 Months: After question number 8 (then continue with question number 8a).

Often, the way parents feel about their own children has something to do with the way their parents felt about them. I'd like to spend a few minutes talking with you about the way you were raised, and how you were disciplined.

1. First of all, thinking back, do you think your parents were good parents? Why or why not?

2. What are some of the things they did that make you feel that way about them? (Let the mother talk about both good things and bad things if she wants to.)
3. Did you always know when your parents were angry with you? (If yes, ask how; if no, continue.)
   a. How? (Probe—e.g., how did you know they were upset: Did they do something specific? Do not try to give examples of things parents would do when angry, e.g., do not say, "Did they hit you or slap you?" This is leading the responses and could invalidate the information.)

4. In general, how were you disciplined? (Probe—but again, stick with the question how and try not to give examples.)

5. Do you ever remember getting spanked so hard by your parents that a bruise was left?
6. As a kid, do you ever remember getting burned or cut by your mom or dad when they were "trying to teach you a lesson?"

7. Did your mom or dad ever hit you hard enough to cause a broken bone anywhere?

8. Did you ever have to go to the doctor's office after your mom or dad disciplined you because they hurt you?
9. Did you ever feel like you wanted to go to the doctor's after someone disciplined you, but didn't get to go?

10. Did you ever spend time in a foster home? If yes:
   a. How many?
   b. How long in each one?
   c. How long in foster homes altogether?

11. How was affection shown between you and your father?
13. Did you ever feel like they were seeking types of affection you were unwilling to give?

14. We know now that sexual activity among dads and daughters and brothers and sisters is much more common than we thought before. I’m wondering if you ever experienced sexual contact with either your father or brother.

15. Did either of your parents ever leave you for long periods of time without telling you where they were going? (Do not give examples and let the mother determine what a long period of time is. Don't interpret that for her, but make sure that if she says yes she explains the situation as clearly as possible.)
16. Did you ever have to go a long time without getting fed? (Again, let the mother interpret this herself.)
Child Care Rating Scale
CHILD CARE RATING SCALE

I. Acts of Commission

A) Physical (all items under "physical" are divided into 2 subdivisions: a) any occurrence, and b) admittedly intentional).

- human bites
- broken bones
- bruises

1) major: large or numerous, serious bruises
2) minor: one or two smaller bruises

- burns
- scratches or cuts
- welts

- one
- more than one

- scars
- hematomas

B) Parental Characteristics

- evidence of violence in the household

a) questionable
b) relatively certain (mother/father report)

- mother bruises or beaten

a) possibly intentional, inflicted
b) relatively certain intentionally inflicted

- mother/father reports harming child

- mother/father reports fearing she/he will harm the child
- mother/father reports father/mother or other harming the child
mother/father verbally abuses the child (intensity, frequency, appropriateness); mother/father raise voice for behavior that the child does not appreciate the appropriateness of

mother/father observed being excessively rough with the child (if rapport is good, ask mother/father if they have ever had to discipline the baby. Also, ask what they do when baby cries)

mother/father make comments that child can't be disciplined

mother/father make unrealistic demands of child

C) Child Characteristics

child startles, looks terrified, pulls back, becomes anxious when mother/father moves suddenly toward him/her or raises her/his voice

II) Acts of Omission

A) Physical

overall nutritional level of child (malnutrition)

poison available to child

history of poison ingestion

external infections, sores and bedsores, e.g., bites, scratches, eczema, etc., that become infected

diaper rash persistent (48 hours) and/or untreated

B) Physical Care

unwashed

seasonally improperly dressed

extremely dirty clothing

C) Living Conditions

house extremely messy, dirty

dishes unwashed (extreme)

spoiled or rotting food sitting around

garbage piled up in house and/or yard
soiled, stained crib -- e.g., sheet

insects or rodents

protecting the child from natural dangers; what does mother allow child to play with; what has mother done to protect child from such dangers as stairs, electrical cords, sharp objects, etc.

improper sleeping arrangements for child - describe

D) Parental Characteristics

mother leaves baby alone unattended when she leaves the apartment or house

mother leaves baby with others indiscriminately - inappropriate caretaker

mother leaves baby with others frequently and for long periods of time

failure to follow recommended care plans provided by emergency room, clinics or other health care workers (e.g., nurses, social workers, dieticians, etc.)

constant source of friction in the home: chaotic home life - drinking, drugs

principal caretaker doesn't check child when child is awake

no or few appropriate things for baby to play with

mother doesn't interact with baby other than at feeding times

child not taken whenever parent goes out - general lack of experience and stimulation, parents see child as burden

parental disorganization or poor judgment detrimental to the child (e.g., parents unable to plan budget, no normal routine for caring for the child)

regarding child care

home management

indifference or unwillingness to accept fact that child has problem

parent openly reports resenting or disliking child

child has been threatened with severe physical harm

numerous visits to clinic or emergency room for inappropriate reasons
failure to keep routine health care appointments
failure to follow through with episodic health care appointments
failure to follow through with consultative health care appointments
apparent chronic illness or accidents not given required medical attention

E) Child Characteristics

weight
height
head circumference

Two standard deviations above or below the mean for children at that age

III) Possible Child Characteristics Resulting from Abuse or Neglect

head banger or rocker
excessive fear of strangers
excessive clinging
excessive crying
after six months--extreme apathy
child doesn't seek comfort from mother when hurt or upset
sleeping disturbance
stereotypic, obsessive, self-stimulating behavior

IV) Description and Impressions of the Caretaker and Home Setting
Personality Research Form
Directions

Below you will find a series of statements which a person might use to describe him/herself. Read each statement and decide whether or not it describes you.

If you agree with a statement or decide that it does describe you, answer TRUE. If you disagree with a statement or feel that it is not descriptive of you, answer FALSE.

Answer every statement either true or false, even if you are not completely sure of your answer.

1. I go out of my way to prevent anyone from getting the best of me.  T  F
2. It is usually quite easy for me to admit I am wrong.  T  F
3. Often I stop in the middle of one activity in order to start something else.  T  F
4. If I feel sick, I don't like to have friends or relatives fuss over me.  T  F
5. I have never bought anything in a store.  T  F
6. I am quite able to make correct decisions on difficult questions.  T  F
7. When I bump into a piece of furniture, I don't usually get angry.  T  F
8. I would get into a long discussion rather than admit I am wrong.  T  F
9. I am careful to consider all sides of an issue before taking action.  T  F
10. I would like to be married to a protective and sympathetic person.  T  F
11. I could easily count from one to twenty-five.  T  F
12. I am never able to do things as well as I should.  T  F
13. I think that certain people deserve to be put in their places.  T  F
14. I don't mind having my mistakes pointed out to me at times when other people can hear.  T  F
15. I often say the first thing that comes into my head.  T  F
16. I prefer not being dependent on anyone for assistance.  T  F
17. I can run a mile in less than four minutes.  T  F
18. My life is full of interesting activities.  
19. I seldom feel like hitting anyone.  
20. People find it very hard to convince me that I am wrong on a point.  
21. I am pretty cautious.  
22. I try to share my burdens with someone who can help me.  
23. I have never talked to anyone by telephone.  
24. I believe people tell lies any time it is to their advantage.  
25. When I am irritated, I let it be known.  
26. I usually let unkind things someone might say about me pass without making any reply.  
27. When I go to the store, I often come home with things I had not intended to buy.  
28. The person I marry won't have to spend much time taking care of me.  
29. I usually wear something warm when I go outside on a very cold day.  
30. If someone gave me too much change I would tell him/her.  
31. I rarely get angry either at myself or at other people.  
32. I don't like people to joke about what they feel are my weaknesses.  
33. Rarely, if ever, do I do anything reckless.  
34. I want to be sure someone will take care of me when I am old.  
35. I make all my own clothes and shoes.  
36. I would be willing to do something a little unfair to get something that was important to me.  
37. Stupidity makes me angry.  
38. If faced by a good argument, I am usually willing to change my position even on important issues.  
39. Many of my actions seem to be hasty.  
40. I usually make decisions without consulting others.
41. I have never brushed or cleaned my teeth. T F
42. I get along with people at parties quite well. T F
43. I would never start a fight with someone. T F
44. I am on guard against people who might try to make a big thing of my mistakes. T F
45. Emotion seldom causes me to act without thinking. T F
46. I like to ask other people's opinions concerning my problems. T F
47. Things with sugar in them usually taste sweet to me. T F
48. I did many very bad things as a child. T F
49. I have been known to fly into a rage if things didn't go as I had planned. T F
50. Most of the people with whom I am in contact ignore any minor errors I make. T F
51. I have often broken things because of carelessness. T F
52. I prefer to face my problems by myself. T F
53. Sometimes I see cars near my home. T F
54. I am glad I grew up the way I did. T F
55. If someone does something I don't like, I seldom say anything. T F
56. I tend to react strongly to remarks which find fault with my personal appearance. T F
57. I have a reserved and cautious attitude toward life. T F
58. If I ever think that I am in danger, my first reaction is to look for help from someone. T F
59. I have never had any hair on my head. T F
60. I often question whether life is worthwhile. T F
61. I often make people angry by teasing them. T F
62. If someone finds fault with me I just listen quietly. T F
63. Most people feel that I act impulsively. T F
64. When I was a child, I disliked it if my mother was always worrying about me. T F
65. I have traveled away from my home town. T F
66. I am always prepared to do what is expected of me. T F
67. I avoid criticizing others under any circumstances. T F
68. When people say insulting things about me I usually get back at them by pointing out their faults. T F
69. My thinking is usually careful and purposeful. T F
70. I like to be with people who take a protective attitude toward me. T F
71. I have never ridden in an automobile. T F
72. My daily life includes many activities I dislike. T F
73. Sometimes I feel like smashing things. T F
74. I don't mind being teased about silly things I have done. T F
75. Sometimes I get several projects started at once because I don't think ahead. T F
76. I would rather act on my own than have a superior help me. T F
77. I have never felt sad. T F
78. I am one of the lucky people who could talk with my parents about my problems. T F
79. If someone hurts me, I just try to forget about it. T F
80. If someone accused me of making a mistake, I would call attention to his/her mistakes. T F
81. I am not one of those people who blurt out things without thinking. T F
82. I usually tell others of my misfortunes because they might be able to assist me. T F
83. I try to get at least some sleep every night. T F
84. Many things make me feel uneasy. T F
85. I get a kick out of seeing someone I dislike appear foolish in front of others. T F
86. I don't get angry when people laugh at my errors. T F
87. I find that thinking things over very carefully often destroys half the fun of doing them. T F
88. As a child, I disliked having to be dependent on other people. T F
89. Sometimes I feel thirsty or hungry. T F
90. I am careful to plan for my distant goals. T F
91. I rarely swear. T F
92. I never allow anyone to talk me down on an important issue. T F
93. I generally rely on careful reasoning in making up my mind. T F
94. I often seek other people's advice. T F
95. I have attended school at some time during my life. T F
96. I find it very difficult to concentrate. T F
Life Events Inventory
LIFE EVENTS SCHEDULE: 30 month revision, 42, 48, 54, and 60 months

Check if any of these things have happened to the mother and father during the past 12 months. Use a reference point such as birthday, season of year, holiday, etc., to help mother recall events over the past year. The scale is to be read to the mother and filled in by the interviewer. Pause after you read each item and give the mother plenty of time to think of each event. Then necessary, probe for further information, particularly if it relates to drug or alcohol problems.

1. Unemployed mother ____________ Husband/boyfriend ____________
   how long
   desirable
   boyfriend in home?
   reason for unemployment

2. Job changes in last year (#) ____________ (mother or husband/boyfriend?)
   Changes in hours
   Changes in work conditions
   Promotion
   Desired or undesired
   Changes in responsibility
   Change in type of work

3. Trouble with welfare
   paperwork
   money reduced
   money delayed (how long)
   money taken away

4. Trouble with superiors or continued tension at work (explain the trouble and the results of the problems)

5. Moved during the past 12 months ____________ Dates ____________
   (Explain circumstances, e.g., eviction, move to parents)

6. Purchasing own home (taking out mortgage) ____________

7. Quarrel with neighbors (explain circumstances, was physical force used?)

8. Income decreased substantially (25%) ____________
   life threatening?
   change in living standards? ____________ (describe)

9. Getting into debt beyond means of repayment
   Any repossessions or legal actions? ____________
10. Honey problems (shortage so that you have trouble managing) ____________________________
   life threatening? ____________________

11. Arguments about how money is spent
   frequency of fights __________________ Severity of fights __________________

12. You or immediate family member convicted of minor violations
   who was involved and how close is the relationship ___________________________
   what are the results?
   Speeding ____________ DUI ____________ Assaults ____________ Parking Tickets ____________
   Accidents ____________ Drug Possession ____________ Theft ____________
   Prostitution ____________ Rape ____________ Other __________________

13. Jail sentence of immediate family (includes workhouse). Who? (how close is the relationship?)
   How long? ____________________________

14. You or immediate family involved in physical fight
   with whom __________________ How often __________________
   (probe for drug or alcohol involvement)

15. Immediate family member drinking heavily ____________ Who and how close is the relationship
   Impact __________________

16. Immediate family member attempts suicide (or claims considering suicide)
   Who and how close is the relationship? ____________________________

17. Death of immediate family member or close friend ____________
   Who and how close is the relationship? ____________________________

18. Immediate family member seriously ill __________________ with what
   Who and how close is the relationship? ____________________________

19. Gain of new family member (immediate) (birth or marriage) who
   member of mother's household? ____________________________

20. Husband or boyfriend intoxicated frequently (alcohol or drugs) ____________
   frequency of occurrence __________________ explain any harm on home life
   have you ever threatened to leave because of your husband/boyfriend's drug or
   alcohol abuse? __________________

21. Serious restriction of social life __________________ probe for severity due to lack of money
   no babysitter ________ husband/boyfriend restrict social life ____________

22. Period of homelessness (no permanent residence)
   where stayed during period __________________
   reason for homelessness __________________
   separation from child involved? __________________

23. Serious physical illness or injury of mother, child or father requiring
   hospitalization. Treatment __________________ what __________________ how long __________________
24. Prolonged ill health of mother, child or father requiring treatment by a doctor

25. Miscarriage

26. Abortion

27. Pregnancy

28. Marriage (of mother)

29. Boyfriend(s) move out

30. Other people moving in and out

31. Increase in number of arguments, or severe arguments with spouse (or boyfriend/girlfriend) (severe enough to have affected the relationship)

32. Have you ever been frightened by your husband/boyfriend or other family members

33. Increase in number of arguments or severe fights with close friend (severe enough to have affected the relationship) Explain

34. Trouble with relatives (e.g., in-laws)

35. Marital separation or break-up (includes on-going relationship with boyfriend)

36. Divorce

37. Marital reconciliation

38. Custody, visitation problems

39. Separation of mother and child

Further elaboration, if necessary:

Note any other stressful events that may have occurred in mother's life
Social Networks Inventory
1) On the following chart, please list the first names of all those people who are important to you. People who are important to us may not always be the persons we like, but they may play a major role in our lives. These people should be listed, too. After you list the name, please list their sex, their relationship to you (friend, husband, boyfriend, relative), and how long you've known that person. You don't have to fill in all the spaces, but if you need more room, you can use the other side of this sheet.

<table>
<thead>
<tr>
<th>Name</th>
<th>Sex</th>
<th>Relation</th>
<th>Time Known</th>
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<tbody>
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</tbody>
</table>
2) Now, for each person on your list, I'd like you to rate overall how helpful each one is to you.

<table>
<thead>
<tr>
<th>Name</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very helpful: this person makes my life easier and better</td>
<td>Usually helpful</td>
<td>Sometimes helpful</td>
<td>Helpful only one in a while</td>
<td>Very unhelpful; this person makes my life more difficult</td>
</tr>
</tbody>
</table>
3) What I'd like to know now, is how many of your friends know each other. To do that, I'll place an "x" in the square where two names meet if they know each other.
4) On this list, please list how easy or difficult it is for you to get these things done.

<table>
<thead>
<tr>
<th>Item</th>
<th>Very easy/never a problem</th>
<th>Pretty easy/very often</th>
<th>Problem about half the time</th>
<th>Pretty hard/usually a problem</th>
<th>Very hard/can never find anyone</th>
</tr>
</thead>
<tbody>
<tr>
<td>someone to babysit the children</td>
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<tr>
<td>help out when there's an emergency with the kids</td>
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<tr>
<td>get someone to do the shopping or pick up a few things at the store</td>
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<td>borrow small amounts of money</td>
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<tr>
<td>take the kids for awhile so that you can have a break</td>
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<tr>
<td>help out when the kids are sick</td>
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<tr>
<td>help out with transportation when you get stuck</td>
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<tr>
<td>borrow things like clothes, laundry baskets, irons</td>
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<tr>
<td>get someone to watch the kids if you want to go out at night</td>
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</tbody>
</table>
Family Environment Scale
FAMILY ENVIRONMENT SCALE, FORM K

Name __________________________ Date __________________________

You are to decide which of these statements are true of your family and which are false. If you think the statement is true or mostly true of your family, make an X on the T (true). If you think a statement is false or mostly false of your family, make an X on the F (false).

You may feel that some of the statements are true for some family members and false for others. Mark T if the statement is true for most members. Mark F if the statement is false for most members. If the members are evenly divided, decide what is the stronger overall impression and answer accordingly.

1. Family members really help and support one another.  T F
2. Family members often keep their feelings to themselves.  T F
3. We fight a lot in our family.  T F
4. We don't do things on our own very often in our family.  T F
5. We feel it is important to be the best at whatever you do.  T F
6. We often talk about political and social problems.  T F
7. We spend most weekends and evenings at home.  T F
8. Family members attend church, synagogue, or Sunday School fairly often.  T F
9. Activities in our family are pretty carefully planned.  T F
10. Family members are rarely ordered around.  T F
11. We often seem to be killing time at home.  T F
12. We say anything we want to around home.  T F
13. Family members rarely become openly angry.  T F
14. In our family, we are strongly encouraged to be independent.  T F
15. Getting ahead in life is very important in our family.  T F
16. We rarely go to lectures, plays or concerts.  T F
17. Friends often come over for dinner or to visit.  T F
18. We don't say prayers in our family.  T F
19. We are generally very neat and orderly.  T F
<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>20.</td>
<td>There are very few rules to follow in our family.</td>
</tr>
<tr>
<td>21.</td>
<td>We put a lot of energy into what we do at home.</td>
</tr>
<tr>
<td>22.</td>
<td>It's hard to &quot;blow off steam&quot; at home without upsetting somebody.</td>
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<tr>
<td>23.</td>
<td>Family members sometimes get so angry they throw things.</td>
</tr>
<tr>
<td>24.</td>
<td>We think things out for ourselves in our family.</td>
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<tr>
<td>25.</td>
<td>How much money a person makes is not very important to us.</td>
</tr>
<tr>
<td>26.</td>
<td>Learning about new and different things is very important in our family.</td>
</tr>
<tr>
<td>27.</td>
<td>Nobody in our family is active in sports, Little League, bowling, etc.</td>
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<tr>
<td>28.</td>
<td>We often talk about the religious meaning of Christmas, Passover, or other holidays.</td>
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<tr>
<td>29.</td>
<td>It's often hard to find things when you need them in our household.</td>
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<tr>
<td>30.</td>
<td>There is one family member who makes most of the decisions.</td>
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<tr>
<td>31.</td>
<td>There is a feeling of togetherness in our family.</td>
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<tr>
<td>32.</td>
<td>We tell each other about our personal problems.</td>
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<tr>
<td>33.</td>
<td>Family members hardly ever lose their tempers.</td>
</tr>
<tr>
<td>34.</td>
<td>We come and go as we want to in our family.</td>
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<tr>
<td>35.</td>
<td>We believe in competition and &quot;may the best man win.&quot;</td>
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<tr>
<td>36.</td>
<td>We are not that interested in cultural activities.</td>
</tr>
<tr>
<td>37.</td>
<td>We often go to movies, sports events, camping, etc.</td>
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<tr>
<td>38.</td>
<td>We don't believe in heaven or hell.</td>
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<tr>
<td>39.</td>
<td>Being on time is very important in our family.</td>
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<tr>
<td>40.</td>
<td>There are set ways of doing things at home.</td>
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<tr>
<td>41.</td>
<td>We rarely volunteer when something has to be done at home.</td>
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<tr>
<td>42.</td>
<td>If we feel like doing something on the spur of the moment, we often just pick up and go.</td>
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<tr>
<td>43.</td>
<td>Family members often criticize each other.</td>
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<tr>
<td>44.</td>
<td>There is very little privacy in our family.</td>
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</tbody>
</table>
45. We always strive to do things just a little better the next time  T  F
46. We rarely have intellectual discussions.  T  F
47. Everyone in our family has a hobby or two.  T  F
48. Family members have strict ideas about what is right and wrong  T  F
49. People change their minds often in our family.  T  F
50. There is a strong emphasis on following rules in our family.  T  F
51. Family members really back each other up.  T  F
52. Someone usually gets upset if you complain in our family.  T  F
53. Family members sometimes hit each other.  T  F
54. Family members almost always rely on themselves when a problem comes up.  T  F
55. Family members rarely worry about job promotions, school grades, etc.  T  F
56. Someone in our family plays a musical instrument.  T  F
57. Family members are not very involved in recreational activities outside work or school.  T  F
58. We believe there are some things you just have to take on faith.  T  F
59. Family members make sure their rooms are neat.  T  F
60. Everyone has an equal say in family decisions.  T  F
61. There is very little group spirit in our family.  T  F
62. Money and paying bills is openly talked about in our family.  T  F
63. If there's a disagreement in our family, we try hard to smooth things over and keep the peace.  T  F
64. Family members strongly encourage each other to stand up for their rights.  T  F
65. In our family, we don't try that hard to succeed.  T  F
66. Family members often go to the library.  T  F
67. Family members sometimes attend courses or take lessons for some hobby or interest (outside of school).  T  F
68. In our family each person has different ideas about what is right and wrong.  T  F
69. Each person's duties are clearly defined in our family.  T  F
70. We can do whatever we want to in our family.  T  F
71. We really get along well with each other.  T  F
72. We are usually careful about what we say to each other.  T  F
73. Family members often try to one-up or out-do each other.  T  F
74. It's hard to be by yourself without hurting someone's feelings in our household.  T  F
75. "Work before play" is the rule in our family.  T  F
76. Watching T.V. is more important than reading in our family.  T  F
77. Family members go out a lot.  T  F
78. The Bible is a very important book in our home.  T  F
79. Money is not handled very carefully in our family.  T  F
80. Rules are pretty inflexible in our household.  T  F
81. There is plenty of time and attention for everyone in our family.  T  F
82. There are a lot of spontaneous discussions in our family.  T  F
83. In our family, we believe you don't ever get anywhere by raising your voice.  T  F
84. We are not really encouraged to speak up for ourselves in our family.  T  F
85. Family members are often compared with others as to how well they are doing at work or school.  T  F
86. Family members really like music, art and literature.  T  F
87. Our main form of entertainment is watching T.V. or listening to the radio.  T  F
88. Family members believe that if you sin you will be punished.  T  F
89. Dishes are usually done immediately after eating.  T  F
90. You can't get away with much in our family.  T  F
Appendix C
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<tr>
<td>Abused</td>
<td></td>
<td>0.51</td>
<td>-0.18</td>
<td>0.23</td>
<td>0.05</td>
<td>0.07</td>
<td>0.15</td>
<td>-0.44</td>
<td>0.28</td>
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<td>Abusing</td>
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<td>0.36</td>
<td>-0.05</td>
<td>0.11</td>
<td>-0.01</td>
<td>-0.51</td>
<td>0.16</td>
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<td>Hostility</td>
<td>-0.26</td>
<td>-0.00</td>
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<td>0.00</td>
<td>-0.03</td>
<td>0.22</td>
<td>0.03</td>
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<td>Continuity</td>
<td>-0.00</td>
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<td>0.10</td>
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<td>-0.12</td>
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<td>Rigidity</td>
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