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CAUSAL MODELS OF ALCOHOLIC FAMILY ENVIRONMENT PREDICTING CHILDREN'S BEHAVIOR PROBLEMS

By

Hae-Young Yang

A DISSERTATION

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ABSTRACT

CAUSAL MODELS OF ALCOHOLIC FAMILY ENVIRONMENT PREDICTING CHILDREN'S BEHAVIOR PROBLEMS

By

Hae-Young Yang

The present study examined the causal relationships among variables related to functioning of young alcoholic families with a biological son between the ages of three and five. Parental alcoholism is not the only risk present in the alcoholic family. There are other co-occurring risks, such as other parental psychopathology, inadequate parenting, family conflict, low SES, and social isolation. Thus, it seemed unlikely that psychopathology in COAs could be attributed solely to parental alcoholism so long as other risks were present in varying degrees and combinations. The present study assumed that the level of psychosocial functioning of alcoholics and their spouses was negatively related to the degree of disrupted family functioning and the level of their offsprings' adaptive functioning. This study was to explain the dynamic processes of how alcoholic fathers', their wives' psychosocial variables and child variables interacted to lead to children's adaptive

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behavior. Path models were constructed to explain causal relations among parental variables such as lifetime alcohol problems, antisocial behavior, ego functioning, social support, stress, current depression, and children's variables such as temperament and behavior problems. The results of path analyses and hierarchical multiple regression analyses indicated that parents' current depression predicted significantly their children's behavior problems. Parents' ego functioning, maternal social support, and stress mediated parental psychopathology including lifetime alcohol problems and antisocial behavior and their current depression. Parents' ego resiliency and maternal social support decreased parents' depression, thus they were likely to be involved in protective processes with regard to children's adaptive functioning. Since stress increased parents' depression, it was likely to be involved in exacerbating or vulnerable processes. The results of path analysis showed the effects of alcoholic fathers on their spouses, who were supposed to mediate impact of stress in children's social environment: Alcoholic fathers' support decreased mothers' current depression whereas alcoholic fathers' current depression increased mothers' current depression. Also, it was found that children' temperament contributed significantly to children's behavior problems.

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My appreciation to all staffs, graduate students, and undergraduate students who have dedicated themselves to the collection and management of the data for the MSU Longitudinal Study. A special thanks to the families in this project that I have never met and may not meet.

Finally, thanks to my family who endured my delayed stay here, old friends in New York City who took care of a broken and exhausted graduate student without any complaints during vacations, and two friends in East Lansing who offered a cookie and their sympathetic ears to me for last two years.

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INTRODUCTION TO THE STUDY

Children of alcoholics (COAs) comprise one of the highest risk groups for developing psychopathological problems in their lifetime. COAs may be at a great risk not only for the development of alcoholism, but of psychiatric disorder in general (Russell, Henderson, & Blume, 1984). Many COAs show such psychiatric and physical disorders in childhood and adolescence as conduct disorder, delinquency, depression, hyperactivity, attention deficit disorder, and substance abuse (West & Prinz, 1987; Murray, 1989).

Increasing research on the effects of alcoholic parents on children provides a complex and conflicting picture of children in alcoholic families. First, not all COAs become alcoholics in adulthood and not all COAs develop maladaptive behaviors. Even COAs in the same family do not suffer the same emotional, social, and academic problems (Brown, 1986). The literature on the consequences of parental alcoholism on children's behavior indicates large individual differences among COAs between and within families. Second, it is not clear which behaviors early in the child's life predict psychopathology in later life, since there is considerable variability in COAs' psychopathology, ranging from externalizing behavior to internalizing behavior and,

furthermore, many maladapted COAs did not end up with psychiatric disorders in adulthood.

One way to unravel such complexity is to perform a longitudinal study to assess developmental processes within a dynamic context in which interactions between the child and his social environment occur over time (c.f., Sameroff, 1980). The present study is a part of the MSU Longitudinal study (Zucker & Fitzgerald, 1991), that is concerned with the etiology of alcohol abuse, alcoholism, and antisocial behavior. Compared with other longitudinal studies (Zucker & Noll, 1982; Zucker, 1990) the MSU Longitudinal study recruited fairly young alcoholic families with a biological son between the ages of three and six, whose alcoholic fathers were not from clinical populations. The present study uses data from the first wave of the longitudinal study.

Without considering interrelations among variables describing the functioning of alcoholic families it is impossible to infer how and why certain characteristics of either the child or the environment are causally related to developmental outcome. Rutter (1987) suggests that it is useless to label variables simply as risk or protective types, since it is the process or mechanism, not the variables, that determines the function. Thus the present study focuses on the risk or protective process/mechanism associated with the child's adaptation. There are three limitations to circumscribe the present study. First, the

social environment in which the child is reared is limited to his family due to the child's young age (i.g., three to five years). Since most of the target children have not yet entered school, their experience of the social environment is most likely to be connected to their parents' behaviors. Second, there are two options to assess the child's social environment; to measure the child's family environment by asking subjects (e.g., parents or children) to describe their family environment, or to measure the variables associated with the quality of the child's social environment. The present study chose the second method, assessing parents' characteristics reflecting the active mechanism of the child's social environment. Third, since only male children are involved, the study can only address factors related to the etiology of alcohol abuse and alcoholism in men. It has been generally known that alcoholism is more prevalent among men than among women (Helzer & Pryzbeck, 1988). Biological vulnerability of boys (Rutter, 1984) could be one reason for higher rates alcoholism among sons of alcoholics (Cloninger, Bohman, & Sigvandsson, 1981).

Zucker (1988, 1989) and his colleagues (Zucker & Fitzgerald, 1991; Zucker & Gomberg, 1986) reviewed several longitudinal studies of alcoholism and identified some common factors relating to the continuity of outcome of alcoholic process. Among the common factors, those that describe the characteristics of the social environment of

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prealcoholic males include inadequate and poor parenting, heightened marital conflict, and such parental psychopathological problems as alcoholism, antisocial personality, or sexual deviancy. All of these variables associated with parental psychosocial functioning may serve as risks that potentiate each other's impact on the development of children in alcoholic families.

Alcoholics' and their spouses' psychopathology and poor psychosocial functioning likely facilitate the development of adverse interactions among family members (Seilhamer & Jacob, 1990). Children are not only exposed to such psychopathology but may be drawn into it. The present study examined the causal relationships among parental variables related to the child's social environment and behavior, including alcoholism, antisocial behavior, personality, depression, stress, and social support. Within this context, it is possible to assess what variable in alcoholic families is involved in either risk or protective process. Specially, the present study was interested in roles that alcoholics and their spouses play in family functioning. Do alcoholic fathers have direct effects on their children or are the effects of alcoholic fathers mediated by their wives (Jacob & Leonard, 1986)?

The present study proposes an theoretical model of the COAs' social environment from which three path models are derived. The first model examines parental effects on child adaptive functioning. The second path model examines

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paternal effects on the child, while the third path model examines maternal effects. Compared with the first model, the second and the third models test more detailed explanations of the link between parental characteristics and child characteristics.

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REVIEW OF THE LITERATURE

The Children at Risk

Previous reviews of alcoholic families yield two major conclusions. First, children of alcoholics (COAs) have higher rates of alcoholism and alcohol-related problems than do children whose parents are not alcoholic (nonCOAs) (Russell, 1990). Second, there are extensive individual differences in COAs' responses to risks within their social environment, particularly to parental alcoholism.

The Prevalence of Alcoholism among COAs

Many Americans grow up in alcoholic families; 22,000,000 persons aged 18 or more and 6,600,00 under age 18, or one out of every 8 Americans (Russell, Henderson, & Blume, 1984). A similar number of people diagnosed as alcohol abuse/dependence was found in the Epidemiologic Catchment Area (ECA) study that surveyed psychiatric disorder in the general population (Helzer & Pryzbeck, 1988). About 13 percent of the total sample from five cities across the United States had a diagnosis of alcohol abuse/dependence. It seems plausible to believe that there are between twenty-five and twenty-eight million children of alcoholics in American Society (Ackerman, 1983), though

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estimates of the prevalence of alcoholism among COAs varied between studies.

One of the problems in estimating of familial transmission of alcoholism is that the representativeness of the sample studied and the diagnostic criteria for alcoholism are different across studies (Russell, 1990; West & Prinz, 1987). Many studies use clinical samples of alcoholics in treatment so they likely inflate the risk for alcoholism in COAs (Russell, 1990). Russell argues that samples having large numbers of serious alcoholic fathers may overestimate alcoholism in their sons and underestimate it in their daughters, (see also Cloninger, Bohman, and Sigvardssons, 1981). Also, different definitions for alcoholism across studies make it impossible to compare results of different studies (West & Prinz, 1987; Russell, 1990). Generally the diagnostic criteria for alcoholism include drinking behaviors and drinking-related problems: physical dependence; loss of control, morning drinking, or another pattern of pathological use; and adverse social and occupational difficulties from drinking (West & Prinz, 1987).

Secondary factors seemed to influence estimates of familial transmission of alcoholism. For example, the Epidemiologic Catchment Area study reported high comorbidity rates between alcoholism and other psychiatric diagnoses. Thus, additional psychiatric disorders may affect the incidence of alcoholism (Russell, Henderson, & Blume, 1984).

In addition, there are other possible secondary factors if severe alcoholism is associated with other risks likely to increase alcoholism among COAs, such as low socioeconomic status, family conflict, divorce, violence, and social alienation (El-Guebaly & Offord 1977; Russell, 1990; Leonard & Jacob, 1988). Most studies of COAs have linked these secondary factors (c.f., Zucker's nondrinking-specific factors; Zucker & Noll, 1982; Zucker, 1986) to parental alcoholism within alcoholic families. Nevertheless, as several investigators point out, the nature of causal links among parental alcoholism and other co-occurring secondary factors, such as low SES, family disorganization, and parents' other psychiatric disorders is not clear (El-Guebaly and Offord, 1977; West & Prinz, 1987).

Although there is considerable variation in the prevalence of alcoholism among COAs, rates of alcoholism are higher among COAs than in the general population (Cotton, 1979; Russell, 1990). Certainly COAs are the highest risk group for the development of alcoholism. However, alcoholism is not the only possible outcome for children raised in alcoholic families. COAs may be at a great risk for the development of psychiatric disorders as well. Associated forms of psychopathology include conduct disorder, hyperactivity, low school performance, delinquency, substance abuse, and depression (El-Guebaly & Offord, 1977; Russell, Henderson, & Blume, 1984; West & Prinz, 1987; Murray, 1989; Windle, 1990).

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Assessment of COAs' Psychopathology

There are several problems in evaluating the incidence of psychopathology in COAs. First, there is considerable variability in COAs' psychopathology, ranging from externalizing behavior (e.g., conduct disorder and delinquent behavior) to internalizing behavior (e.g., depression and somatic symptoms; West & Prinz, 1987; Windle, 1990). The interrelationship among such symptoms in COAs is not clear. Since most studies only assess a limited set of possible symptoms and depend on either one or two sources of information (e.g., parents or COAs' self-report) (West & Prinz, 1987), a general pattern of psychopathology in COAs has failed to materialize.

Related to the question of etiology, it is not clear that age or developmental level is especially associated with certain types of psychopathology (West & Prinz, 1987). It is likely that as the child's developmental level and risk factors associated with the child's social environment change (Zucker & Noll, 1984; Phares & Compas, 1992), the child's psychopathological symptomatology will also change. Thus, unless one adapts a longitudinal prospective strategy, it will be impossible to determine how precursor events of early childhood are connected to alcoholism and psychopathology in adulthood.

From the child' perspective, parental alcoholism is not the only risk factor present in an alcoholic family. There are other co-occurring risk factors, such as parental

psychiatric illness, family disorganization, marital discord, poor parenting, low SES, and social isolation (Seilhamer & Jacob, 1990). Thus, it seems unlikely that psychopathology in COAs can be attributed solely to parental alcoholism so long as other risk factors are present in varying degrees and combinations (West & Prinz, 1987).

Phares and Compas (1992) reviewed studies of developmental psychopathology and pointed out that the separate contributions of fathers and mothers to child maladjustment were ignored in analysis of data. Many studies aggregated data of fathers and of mothers, making it impossible to identify the independent contributions of fathers and mothers, or the interaction of paternal and maternal variables. Furthermore, some studies collected only one parent's data, usually mother's, thus ignoring the other parent's effect on child psychopathology. Phares and Compas argue that only by separating the data pertaining to fathers and mothers it is possible to discern under what circumstances paternal and maternal variables contribute to child psychopathology. It is likely that studies of alcoholic parents ignore the separate contributions of fathers and mothers to children maladjustment within alcoholic family environment.

COAs' Psychopathology

Zucker (1989) and his colleagues (Zucker, Noll, Drazni, Baxter, Weil, Theado, Greenberg, Charlot & Reider, 1984; Zucker & Gomberg, 1986; Zucker, 1988) reviewed several

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longitudinal studies of alcoholism and identified common factors related to continuity of outcome of alcoholic process. These factors can be grouped into two categories of variables, those related to the child and those related to parents. Parent variables in prealcoholic homes include inadequate and poor parenting, heightened marital conflict, alcoholism, antisocial behaviors, and sexual deviancy. Child variables include antisocial behavior, higher activity level, poor achievement, and interpersonal deficits (El-Guebaly & Offord, 1977; Knop, Teasdale, Schulsinger, & Goodwin, 1985; McCord, 1988; Tarter, Alterman, & Edwards, 1985; Werner, 1986).

El-Guebaly and Offord (1977), in their review of the literature, concluded that there was a relationship between hyperactivity in childhood and psychiatric disorder later in life, particularly alcoholism, antisocial personality, and hysteria. In addition, hyperactivity and antisocial behavior were frequently co-occurring during childhood. Rydelius (1984) followed offspring of alcoholics who received treatment in the Swedish clinics. The fathers had a long history of alcoholism, often exceeding 10 years. Rydelius did not specify at what ages children's functioning at school was examined or how many children were examined. He provided only that half of school age children experienced considerable problems of adjustment at school where they were falling behind their classmates even though they had normal intelligence. The main reasons for their

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difficulty in school related to hyperactivity and lack of concentration. For instance, for the youngest group of schoolboys about 75 percent of the 7-9-year-old boys were considered as problem children at school. Girls from alcoholic home environments had similar problems of adjustment at school. In the follow-up study Rydelius found that the boys who reacted to their situations by "acting-out," and who were physically neglected, and whose fathers were especially seriously addicted to alcohol were more vulnerable to maladjustment problems and substance abuse in adulthood.

From a large Danish birth cohort, Knop, Teasdale, Schulsinger, and Goodwin (1985) selected about 204 sons of alcoholics and matched controls for a longitudinal study of alcoholism. The alcoholic fathers were selected if they had been identified as alcoholic in either of two Sweden registers. At age 19 and 20 the premorbid assessment was conducted by social worker interview, psychopathological interview inquiring about adolescent COAs' drinking behaviors, and teachers completing a questionnaire on the child's intellectual, emotional and social functioning. The COAs experienced more difficulties in school than the control group; they attended more schools and more often repeated a grade than the control group. Fifty-one percent of the COAs had been referred to a school psychologist, as compared to 34 percent of the control group. Teachers evaluated the COAs as being more impulsive-restless and as

having poor verbal ability. Knop et al. have concluded that cognitive dysfunctioning may antecede alcoholism in COAs with a history of hyperactivity during childhood or with a family history of alcoholism, suggesting a possible genetic component of risks.

McCord (1988) followed boys who were participating in a delinquency prevention program in order to identify developmental paths that likely lead to alcoholism. The criteria for screening alcoholic fathers were if their fathers experienced drinking-related problems in either work place or marital relation, if he received treatment for alcoholism, or if he had been convicted at least three times for public drunkenness. The COAs were selected on the basis of information about parental alcohol-related problems collected from either the primary caretaker or the COAs themselves. Among 203 families, 65 fathers (32%) were identified as alcoholics. Forty-seven percent of the COAs became alcoholics, compared to 25 percent of the nonCOAs. The COAs were more likely to have a record of juvenile delinquency and to become alcoholics or criminals in adulthood if their elementary school teachers rated them as both aggressive and shy. Unfortunately McCord did not provide other data concerning the boys' school performance. Another longitudinal study (Werner, 1986) showed that by age 10, almost a third of the COAs were in need of long-term mental health care. By age 18, 30 percent of the COAs had records of delinquency, and 41 percent of the COAs had

serious coping problems that caused difficulties at home, in school, at work, or in the community.

Antisocial behavior, conduct disorder, or delinquency in childhood or adolescence are frequently mentioned as precursors of alcoholism in the literature of the COAs (Zucker & Gomberg, 1986; Hesselbrock, Hesselbrock, Babor, Stabenau, Meyer, & Weidenman, 1984). Robins' (1978) classic follow-up study showed that alcoholism, drug abuse, violence, and job trouble were significantly predicted by the level of childhood antisocial behavior, such as arrests, truancy, alcohol, fighting, and dropout. Based on the fact that each childhood behavior significantly predicted a high level of antisocial behavior and each type of adult antisocial behavior was predicted by the number of childhood behaviors, Robin argued that the behaviors that lead to either childhood antisocial behavior or to adult antisocial personality operate in a similar pattern. Donovan and Jessor (1985; Donovan, Jessor, & Costa, 1988) demonstrated that problem drinking, illicit drug use, precocious sexual behavior, and delinquency are likely to form a syndrome composed of highly interrelated "problem behaviors." Thus, regardless of which problem behavior first appears in adolescent, the probability that other dysfunctional behaviors will develop increases dramatically.

Brook, Whiteman, Gordon, and Cohens' (1986) study showed the substantial continuity in personality traits related to children's drug use. They studied patterns of

continuity and change in personality attributes from childhood (5 to 10 years) to adolescence (13 to 18 years) in relation to the adolescents' drug use. The personality attributes in their study are grouped into four major dimensions; conventionality/ unconventionality (e.g., poor school behavior and delinquency), control of emotions (e.g., impulsivity), intrapsychic functioning (e.g., depressive mood and poor ego integration), and interpersonal relatedness (e.g., aggression). They found that childhood personality attributes were related to adolescent personality attributes, which in turn influenced adolescents' drug use.

Evidence is accumulating to support the hypothesis that antisocial behavior, greater activity level, difficulty in achievement-related activity, and interpersonal deficits are core symptoms for development of alcoholism and psychopathology. It is likely that such variables during childhood tend to be highly correlated, particularly so when one considers the developmental history of COAs. For instance, childhood antisocial behavior associated with hyperactivity seems to be a good predictor of COAs' psychopathology in adulthood (c.f., Phares & Compas, 1992). The co-occurrence of antisocial behavior and hyperactivity in childhood is more predictive of high risk status for COAs than is the occurrence of only one of the two symptoms. Nevertheless, not much is known about the interrelationships among symptoms of psychopathology during childhood. A

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complete understanding of such interrelationship among psychopathological symptoms can only be attained by focusing research on prospective studies of family functioning and by testing models that reflect multivariate contextual conceptualizations of developmental process. Mechanistic disease based models of causality have not be especially useful in advancing our understanding of the etiology of alcoholism and its associated psychopathology (Zucker & Fitzgerald, 1991).

Functioning of the Alcoholic Family

The Alcoholic Family Environment

Alcoholic families are frequently described as showing family disorganization, marital discord, adverse interaction and violence among family members, poverty, unemployment, and social isolation (West & Prinz, 1987; Seilhamer & Jacob, 1990; Russell, 1990; Leonard & Jacob, 1988). Two studies using the Family Environment Scale described similar alcoholic family environments despite differences in subjects between studies; one study of alcoholics and their spouses and the other study of adult COAs. Moos and Moos (1984) compared family environments among families of recovered, relapsed alcoholic patients, and sociodemographically matched controls two years after the patients completed treatment. Families of relapsed alcoholics reported significantly less cohesion and

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expressiveness than the other two groups, and families of recovered and relapsed alcoholics showed less emphasis on an active-recreational orientation than did families of controls. Clair and Genest (1987) asked adult offspring of alcoholic and comparison group fathers to report retrospectively on their family environments, and the COAs had lower scores on cohesion, organization, and intellectual orientation, and higher scores on conflict than did the comparison group. However, it should be noticed that the subjects were recruited from college community and most of them were female.

Two unpublished papers from the MSU Longitudinal study dealt with the alcoholic family environment. Zucker, Weil, Baxter, and Noll (1984) found that both husbands and wives in alcoholic families described their relationship in more hostile terms than did comparison families. The second study (Reider, Zucker, Noll, Maguin, & Fitzgerald, 1988), using 70 alcoholic families, dealt with the relationship between perceptions of family environment and recent spousal violence. Alcoholics reporting higher levels of violence toward their wives during the past year had lower scores on cohesion, organization, and active-recreational orientation and high scores on conflict. Alcoholics' wives reporting higher levels of violence toward their husbands also reported similar perceptions of their family environment, except they reported a lower level of moral-religious emphasis. Reider et al. concluded that violence for both

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alcoholics and their spouses was associated with their more negative perceptions of the family environment.

Low socioeconomic status (SES) is frequently found in alcoholic families (Russell, 1990) or families of juvenile delinquents (Rutter & Giller, 1983). Although alcoholic fathers are common in the families of antisocial adolescents, the question is whether or not parental alcoholism has specifically contributed to the etiology of antisocial behavior or whether its main contribution is through its tendency to lower family SES (El-Guebaly & Offord, 1977). Again the same question is asked; what is the relationship between parental alcoholism and other risk factors in alcoholic families?

It is unlikely that the effect of risk factors is additive, but rather that they potentiate one another so that the combined effects of risk factors together is greater than the sum of risk factors (Rutter, 1983, 1987). The real question is how they combine to exert their effect on child development. For example, all children from families of low SES do not turn out to be antisocial children or antisocial adults (Robins, 1978). Low SES may contribute to the level of childhood antisocial behavior, but it is more plausible that low SES moderates the effect of other risk factors in children's environment on child antisocial behavior.

In the family environment of antisocial children other risk factors are consistently found, such as parents'

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criminality and abnormal personality, family discord, poor parenting, and weak parent-child relationship (Rutter & Giller, 1983). These risk factors seem to correlate with each other although the causal links among them are not clear. The time has come to investigate the relationships among the risk and protective factors in alcoholic families in order to discern how risk and protective factors in the child's social environment influence the child's adjustment or maladjustment, thereby potentiating or buffering the child's risk for psychopathology.

Relationships among Parental Psychopathology

Generally studies of the COAs attempt to isolate the specific impact of parental alcoholism on children's psychopathology, but other "secondary factors" associated with alcoholic families likely make such attempts difficult at best. Only the presence of parental alcoholism does not account for variability in dysfunction of alcoholic family, which is partially attributed to other risk factors in family. Although alcoholic families are more dysfunctional than nonalcoholic families, there is a considerable variability within alcoholic families (Clair & Genest, 1987). The variability in the functioning of alcoholic families may account for the observed variability in COAs' outcome (West & Prinz, 1987).

One of main reasons for the variability in the functioning of alcoholic families is that alcoholics are a heterogenous group; a substantial variability in alcoholism

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and coexisting psychiatric disorders. Depression (or affective disorder) and antisocial personality are among the most common co-occurring symptoms of alcoholism (Russell, Henderson, & Blume, 1984; Penick, Powell, Othmer, Bingham, Rice, & Liese, 1984). In the Epidemiologic Catchment Area (ECA) study, 13 percent of the general population sample across the United States had a diagnosis of alcohol abuse/dependence and almost half (47%) of this alcoholic group showed additional psychiatric disorder (Helzer & Pryzbeck, 1988). Antisocial personality was almost four times more common among male alcoholics than in the general population. However, the likelihood of co-occurrence of alcoholism and depression was only slightly greater than occurs in the general population.

Penick, Powell, Othmer, Bingham, Rice, and Liese (1984) subtyped 565 alcoholic patients according to their coexisting psychiatric syndromes into four groups; alcoholics without other syndromes, antisocial alcoholics, depressed alcoholics, and manic-depressive alcoholics. They found that over one third (37%) were diagnosed as alcoholic only, and 63 percent were positive for at least two syndromes. In contrast with the finding of the ECA study, depression was the most frequently reported co-occurring symptoms, followed by mania and antisocial personality. It should be noticed that 48 percent of the antisocial alcoholics were positive for depression and/or mania. The difference between these results and those of the ECA study

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maybe related to differences in the samples of the two studies. The ECA study sampled the general population whereas Penick et al.s' study involved alcoholics in treatment.

In Penick et al.' study the difference in characteristics of alcoholics without other syndromes and antisocial alcoholics were striking. Compared with alcoholics without other psychiatric syndromes, the antisocial alcoholics reported an earlier onset of problem drinking (mean ages of 32.8 and 25.6 years respectively) (Helzer & Pryzbeck, 1988) and a greater likelihood of having a first degree relative who had abused alcohol (56% vs. 74% respectively) (Hesselbrock, Hesselbrock, Babor, Stabenau, Meyer, & Weidenman, 1984). Their results showed that antisocial alcoholics were younger, less educated, and had difficulties at jobs with lower pay than the alcoholics without other syndromes or affective disordered alcoholics. Furthermore, the antisocial alcoholics were less likely to be married or living with their spouse. The alcoholics without other syndromes showed the greatest occupational and marital stability with the affective disordered alcoholics falling in an intermediate position. It was likely that the three alcoholic subtypes with other psychiatric syndromes were generally more impaired than the alcoholics without syndromes. Hesselbrock et al. (1984) argue that the precocious use of alcohol in alcoholics with antisocial personality may result in the usual consequences (social,

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It appears reasonable that alcoholics with coexisting psychiatric disorder may be more associated with dysfunction of families. Families in which alcoholics had more drinking problems and complained of more depression and physical symptoms reported more family arguments, less cohesion and expressiveness, and showed less agreement about their family environment between spouses (Moos & Moos, 1984). In the high risk sample of the MSU Longitudinal study, husbands who reported higher levels of violence toward their wives during the past year showed more lifetime drinking problems and antisocial activity, and they were younger (Reider, Zucker, Noll, Maguin, & Fitzgerald, 1988).

Interactions Between Male Alcoholics and Their Spouse

In high risk families in which a parent is diagnosed for psychiatric disorder, studies typically focus on the role of parental psychopathology for the child's adjustment or maladjustment. However, attention of risk studies has shifted from concentrating on the functioning of impaired family members to the functioning of unimpaired family members in relation to children's adaptation. This new breed of studies does not mean to ignore the impaired parent's influence on child' development, rather risk studies investigate dynamic interactions among parents and child and sources of variation in these interactions among family members. The inability of many alcoholics to support

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their families due to their drinking problems often leads to even greater responsibility for management of the family for mothers (Rydelius, 1984). The level of adaptation of the alcoholics and their spouses predicted the level of alcoholic family functioning (Moos & Moos, 1984). Alcoholics and their spouses who used avoidance coping had more family arguments and the extent of disagreement on an joint tasks performance. Families in which both spouses complained of depression and physical symptoms had more arguments and less cohesion than those in which only one spouse had such complaints.

McCord (1988) has identified four variables as predictors of subsequent alcoholism in sons of alcoholics: father's alcoholism, mother's high esteem for the boy's father, mother's control over the boy, and parental conflict. She argues that the mother's positive attitude toward her alcoholic husband influences the development of alcoholism among boys by teaching their sons that their fathers' drinking behavior is acceptable. Maternal control over the boy inhibited development of alcoholism among sons of nonalcoholics. McCord's findings demonstrate the importance of spousal relationships in the assessment of parental influences on children's problem behavior. In another prospective study involving alcoholic families (Werner, 1986) more of the resilient COAs who did not develop serious mental and coping problems by age 18 had received a great deal of attention from their primary

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caretakers during the first year of life and were perceived as "cuddly and affectionate" by their caretakers. Although family conflict (e.g., parents' separation or divorce) was common during the childhood of the offspring of alcoholics, significantly fewer of the resilient COAs had grown up in homes where such conflict was already apparent in infancy.

Using a nonclinical sample, Jacob and Leonard (1986) studied children of alcoholic, depressed, and control (social drinkers and not depressed) fathers. Alcoholic fathers and depressed fathers, completing the Child Behavior Checklist, reported more behavior problems for their sons and daughters than did the control fathers. There was no difference in parent reported behavior problems for sons of alcoholic fathers and sons of depressed fathers, whereas daughters of the depressed fathers were reported to have more problems than did daughters of the alcoholic fathers. Jacob and Leonard found that though alcoholic and depressed fathers reported higher rates of problem behaviors of their offspring than did control fathers, the majority of these children would not be considered "clinically" impaired. That is, most children were rated within the normal range. Then they conducted an analysis of family functioning for families with at least one severely impaired child rated above a T-score of 70 (99th percentile) on the Child Behavior Checklist total problems scale by either mother or father. Achenbach and Edelbrock (1983) suggested that a T-score of 63 or greater (90th percentile) in their

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nonclinical sample was a reasonable cutoff to discriminate between children who were most like their referred and nonreferred samples. Jacob et al. found that the alcoholic families showed more alcohol-related difficulties, and fathers and mothers had higher scores on the MMPI than alcoholic families who did not report severely impaired children. In addition, alcoholic fathers showed higher depression. However, similar analysis of the families of depressed fathers with at least one severely impaired child did not provide such differences between the parents of impaired and unimpaired children. Similar analysis of alcoholic family functioning for COAs will be conducted in the present study by using Achenbach et al.'s desirable cutoff, the 90th percentile, to examine COAs' Total Behavior Problem score.

Based on their research Jacob and Leonard suggested two things. First, fathers with the most severe level of alcoholism and coexisting psychopathology may exert the most disruptive effects on the family, and in turn, may increase the psychopathological problems of their spouses and children (Moos & Moos, 1984; Penick, Powell, Othmer, Bingham, Rice, & Liese, 1984). Second, it is possible that the spouse plays an important mediating role in whether paternal psychopathology exerts a detrimental effect on the children. Longfellow and Belle (1984) found that a broader range of life stressors affected mothers than children. Maternal mental health mediated impact of the life stressors

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on children; the mother's lack of emotional and physical well-being emerged as a type of stressor of central importance to her children (Longfellow & Belle, 1984; Colletta, 1983).

Statement of the Problem

The broad literature on the functioning of high risk families suggests two major conclusions about parental characteristics associated with children's adaptation. First, the level of severity and chronicity of the disturbed parent's psychopathology is positively related to the degree of disrupted family functioning (Moos & Moos, 1984; Reider, Zucker, Noll, Maguin, & Fitzgerald, 1988) and the level of their offsprings' adaptation (Jacob & Leonard, 1986; Fisher, Kokes, Coles, Perkins, & Wynne, 1987). Second, the level of personal functioning of the unimpaired parent and the relationship between the child and unimpaired parent are positively related to the level of children's adaptation (Jacob & Leonard, 1986; Fisher, Kokes, Coles, Perkins, & Wynne, 1987).

One must be cautious using the term "unimpaired parent" in reference to alcoholic families. Alcoholics' spouses have somatic complaints, depression, antisocial activity, and/or alcohol problems (Moos & Moos, 1984; Reider, Zucker, Noll, Maguin, & Fitzgerald, 1988). However, it is not know whether such problems pre-existed their marriage or whether

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their psychopathology resulted from their interactions with their impaired husband. It is likely that many wives of alcoholics have impaired psychosocial functioning, considering the fact that they often live with a husband with alcohol problems, violent personality, and social difficulties due to his alcohol abuse. Alcoholics' spouses with impaired psychosocial functioning may increase risk for psychopathology in their children rather than providing protective mechanisms that would reduce the impact of risk associated with alcoholic fathers. However, all wives of alcoholics are unlikely to show impaired psychosocial functioning. It is expected that wives of alcoholics may serve as a buffering system for children and compensate for damage that their alcoholic spouse produces (Fisher, Kokes, Coles, Perkins, & Wynne, 1987; Rutter, 1987; Garmezy, 1981). The level of psychopathology and psychosocial functioning of wives of alcoholics may be related to the level of children's adaptation by mediating the child and the negative environmental factors.

It is likely that different levels of parents' psychosocial functioning provide different qualities of caretaking environment to their children. Lewis, Feiring, McGuffog and Jaskirs' (1984) found that the quality of the early infant-caretaker relationship predicted later social-emotional functioning of children. In addition, Lewis et al. found that environmental factors interacted with the quality of early attachment related to children's

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socioemotional development; insecurely attached boys who experienced negative environmental factors were more likely to develop subsequent pathology than were insecurely attached boys who did not experience these factors. Secure boys who were exposed to the same negative environmental factors did not develop psychopathology. However, no relationship between attachment and later psychopathology was observed for girls, and Lewis et al could not find a convincing explanation for sex difference in their results. Lewis et al. concluded that poor early attachment predisposes a boy to psychopathology if he is also subject to environmental stress, thus insecurely attached boys are more vulnerable to environmental stress.

However, one should consider how the parents interacted with their children with respect to negative environmental factors in Lewis et al.'s study. Parents who formed secure attachments with their 1-year-old children may have been able to successfully handle stressful events impinging upon their family, thereby reducing the impact of risk on interaction with their children (Rutter, 1987). On the other hand, parents forming insecure attachments with their children may not have been able to manage stressful events successfully. It could be inferred that the differences in children's adaptation partially resulted from parents' ability to mediate between the child and the adverse environment (Sameroff & Seifer, 1983, 1987; Hetherington, 1984).

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It is expected that the level of parents' psychopathology is associated with their ability to mediate between child and environment. The present study assumes that the level of severity and chronicity of the alcoholic's psychopathology is reflected by measures of lifetime alcohol problems and antisocial activity (Windle, 1990; McCord, 1988; Zucker, 1989; Zucker & Gomberg, 1986; El-Gebaly & Offord, 1977). Antisocial behaviors are not only concomitant syndromes, but they are the most distinguishing coexisting characteristics of alcoholism. Antisocial alcoholics had different sociodemographic backgrounds, family histories of psychiatric disorder, and drinking histories that include social and personal difficulties common to alcohol abuse (Hesselbrock, Hesselbrock, Babor, Stabenau, Meyer, & Weidenman, 1984), compared with other alcoholic subtypes (Penick, Powell, Othmer, Bingham, Rice, & Liese, 1984). Windle (1990) proposed a conceptual model of the relationship between paternal alcoholism and antisocial personality and the development of alcoholism. Paternal alcoholism and/or antisocial personality contributes to childhood conduct disorder among male offspring, which is connected to adolescent alcohol abuse, school problems, and delinquent behavior, which, in turn, contributes to the development of alcoholism in adulthood. In spite of findings indicating that there is a considerable overlap between antisocial personality and alcoholism, Hesselbrock et al. (1984) argue that the two disorders are separate and

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In addition, parents' personality is likely to be related to their mediating role (Colletta, 1981; Pearlin & Schooler, 1978; Belsky, 1984; Anthony, 1987). Studies (Block & Block, 1979; Block, Block, & Keyes, 1988) focusing on personality characteristics indicate that an individual's ego resiliency is directly related to any response to environmental influence. It is likely that an individual with high ego resiliency deals with environmental stress more efficiently, displaying their adaptive functioning within social context. Parents' alcohol problems and antisocial behavior are likely to lead to defects in their such ego resilient functioning.

Based on previous studies of alcoholic families a theoretical path model of the causal relationship among variables within the child's social environment is proposed. As indicated in Figure 1, the path model asserts that the level of parental lifetime psychopathology, including alcohol problems and antisocial behavior will influence their current level of stress and depression, which in turn will lead to inadequate and poor parenting (c.f., Belsky, 1984) that is related to their child's adaptive functioning. Furthermore, alcoholics' lifetime psychopathology and

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current depression will increase their spouses' current stress and depression. Children's characteristics such as temperament influence interactions with parents, thus, the level of their own adaptation (Werner, 1986; Rutter, 1987; Belsky, 1984). Children's temperament may moderate the effect of parenting on children.

Formal Predictions

The present study focuses on causal relations among variables related to functioning of young alcoholic families wherein fathers meet criteria for diagnosis of alcoholism (Figure 1). This study analyzes the data from two directions. First, there is a simple analysis of differences in variables associated with the social environment of children from high risk families and children from comparison families. It is expected that there will be more risk factors in the alcoholic family environment than in comparison families. Second, a path model will be tested to assess how parental variables such as lifetime alcohol problems, antisocial behavior, personality, current depression, and stress are interrelated in the alcoholic family environment. Also the path model will assess how parental characteristics influence the level of children's adaptation and whether alcoholics' spouses mediate the effects of alcoholics' impaired psychosocial functioning on the child. The following hypotheses are tested in this

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(1) Parents' lifetime antisocial activity and alcohol problems will predict the level of their current difficulties (current stress and depression).

(1a) Parents' antisocial behavior will predict the level of their lifetime alcohol problems.

(1b) Parents' antisocial behavior and lifetime alcohol problems will predict low level of adaptive functioning in their personality; high ego undercontrolling and low ego resilient characteristics and their current stress.

(1c) Parents' low ego resilient and high ego undercontrolling functioning will predict their current stress.

(1d) Parents' stress will predict their current depression.

(2) Alcoholics' lifetime alcohol problems and current depression will predict their spouses' current stress and depression.

(3) (3a) For wives of alcoholics, their ego resilient functioning will predict their social support.

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(3b) Wives' social support will decrease their current depression.

(4) Parents' low level of adaptive functioning in their personality and current depression in alcoholic families will predict negative affective and/or authoritarian parenting, leading to poor adaptive functioning in their children.

(4a) Parents' current depression will mediate the effects of their antisocial behavior and lifetime alcohol problems and negative affective and/or authoritarian parenting.

(4b) Current depression of alcoholics' spouses will mediate the effects of current depression of alcoholics and alcoholics' spouses' parenting.

(4c) Child' temperament will moderate the effects of negative parenting on COAs' adaptation.

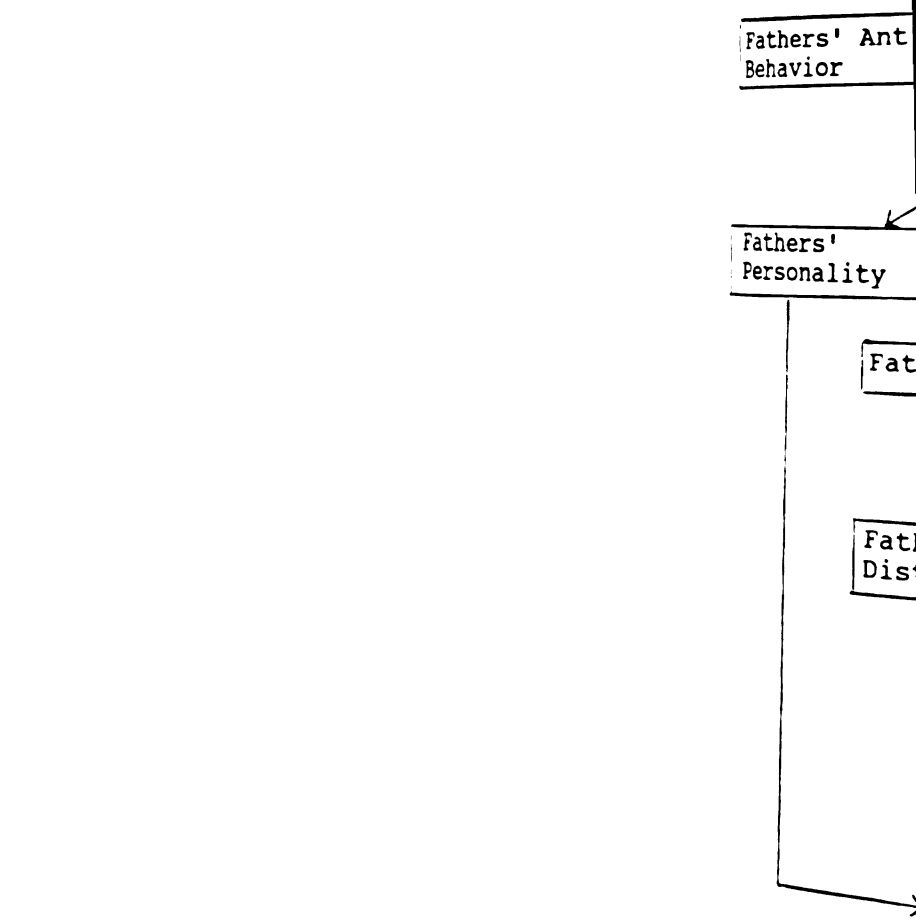

Figure 1

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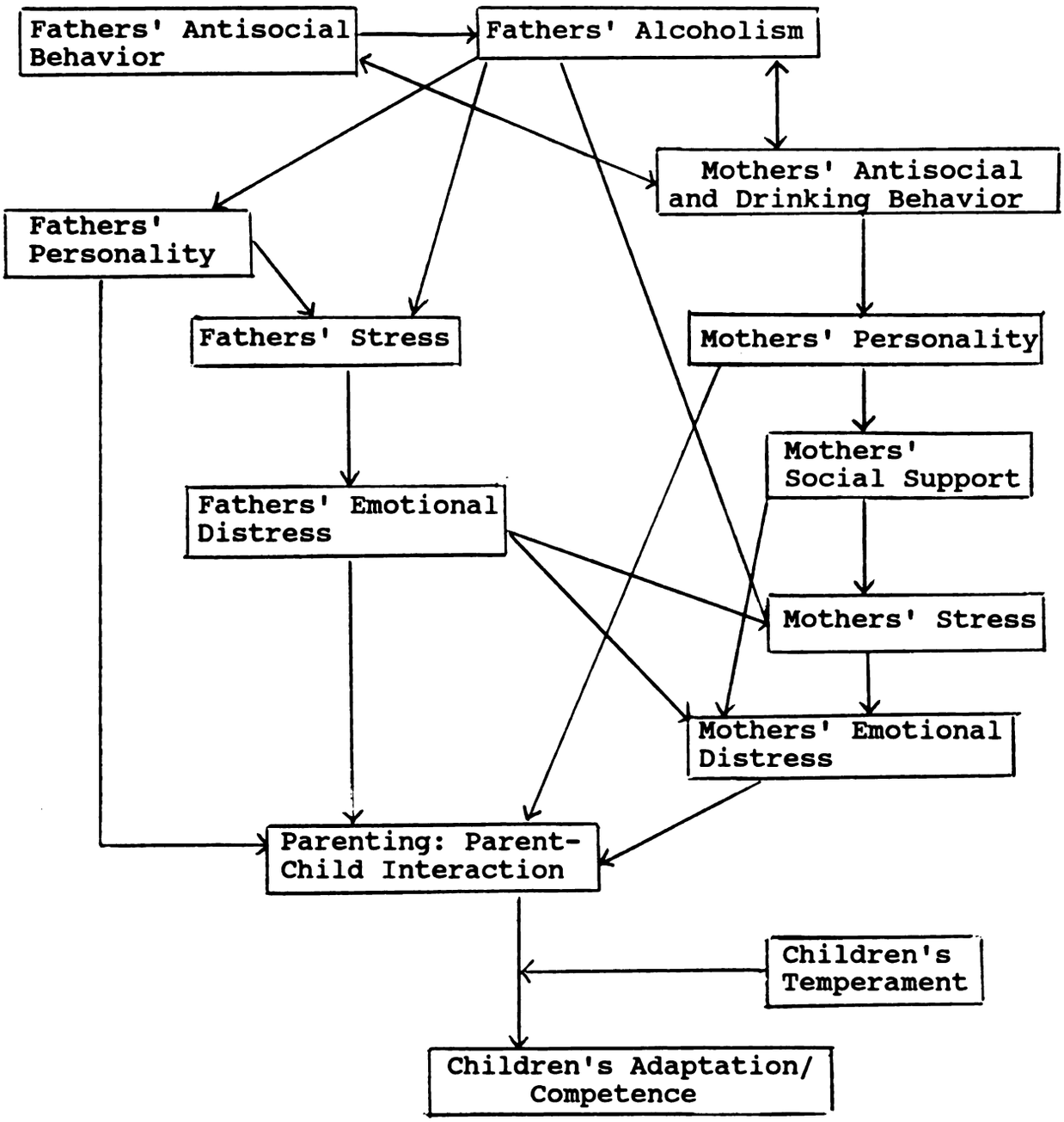

Figure 1

Theoretical Model of Parental Variables Predicting the Level of COAs' Adaptive functioning

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METHOD

Subjects

This study is part of a broader longitudinal study that is concerned with both the etiology and the developmental process of alcohol abuse and antisocial behavior (Zucker, Noll, Draznin, Baxter, Weil, Theado, Greenberg, Charlot, & Reider, 1984). The subjects are 166 families participating in the Michigan State University Longitudinal Study and the families have at least a biological son between the ages of 3.0 to 5.99 (Table 1). Demographic characteristics of the sample are summarized in Table 1. Mean socioeconomic status (SES) of alcoholic families, using the Revised Duncan TSEI2 Index (Stevens & Featherman, 1981), reflected that their occupations such as sales, service, clerical workers, and craftsmen. Mean SES of comparison families was significantly higher than that of alcoholic families ($t(173)=3.69$, $p<.000$). Despite efforts to recruit comparison families matched on SES, it was nearly impossible to find such matches while still holding to other criteria for inclusion.

Alcoholic families (N=131) were recruited from the population of males convicted for driving while impaired or

Table 1

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Table 1

Demographic Characteristics of the Study Sample

	Alcoholic Families (N=131)		Comparison Families (N=35)	
	M	SD	M	SD
Age(Years)				
Target Child	4.19	.82	4.30	.79
Mothers	29.59	4.62	31.10	4.67
Fathers	31.87	5.39	32.85	4.88
Education(Years)				
Mothers	12.70	1.96	13.39	1.95
Fathers	12.72	1.95	14.27	1.90
Years married	7.04	3.39	9.23	3.73
Children in House	2.35	.99	2.50	.95
Socio-economic Status (Duncan)	32.90	15.31	43.83	18.63

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driving under the influence of alcohol. The specific recruitment population is all males convicted of these offenses, residing in a contiguous area involving nearly 4 counties in mid-Michigan, who registered blood alcohol concentrations of 0.15% (150mg/100ml) or higher when arrested, who are currently cohabitating or married, living in an intact family, and who have a biological son between the ages of three and six. A blood alcohol level of 0.15 is suggestive that these males have already developed considera ble tolerance for alcohol consumption. The blood alcohol level of 0.15 or higher is a level that requires a 175-pound man to have consumed approximately 9 ounces of 80-proof liquor in an hour, if drinking on an empty stomach, or about 11 ounces if drinking on a full stomach (Zucker, 1987). Subsequent analysis of the data is conducted to insure that each alcoholic father meets Feighner diagnostic criteria for "probable" or "definite" alcoholism and that each control father does not make this diagnosis nor one of drug abuse/dependence (Zucker, 1987; Noll, Zucker, Fitzgerald, & Curtis, 1990). The majority of alcoholics meet the "definite alcoholism" criterion (Table 2).

These potential candidates were then asked to give their permission to have their names released to the Michigan State University Family Project. The project staff visited their families to screen for suitability whether the necessary conditions for selection were met. Mothers' alcohol use was not considered in the selection process of

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Table 2

Basic Risk Study Design: Michigan State University Longitudinal Study

High Risk Families	Comparison Families
Fathers arrested for driving while impaired (DWI) with blood alcohol levels of 0.15% or higher when apprehended	Fathers have no alcohol-related arrested history
Fathers meet research diagnostic criteria at least for "probable alcoholism" (virtually all meet "definite alcoholism" criterion	Fathers have no alcohol-related diagnosis
Families are intact and have a male target child between the ages of 3.0 and 6.0	Same criterion as high risk families: in addition, comparison families reside in same neighborhoods, are yoked to high risk families for age of target child, and where possible have parallel sibling composition (number, sex, age)

Note. Initial data collection done on father, mother, and target child involves approximately 12 hours of family contact. During this contact time (partially at the university and partially at family's home) 20 hours of questionnaire, laboratory interaction data, developmental assessments, a physical exam, and extensive observer ratings are collected (in the blind) on all families. Follow-up with parallel data collection is at three-year intervals (Zucker, 1987).

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families for the MSU Family Study. Their alcohol problems ranged from alcoholism to nonuse. If the families agreed to participate in the MSU Family Project, they signed a consent form (See Appendix A). Comparison, nonalcoholic families (N=35) were recruited from census-tract-defined neighborhoods of the alcoholic families, and were matched to alcoholic families on a variety of variables including age of male target children, and family composition.

Procedures

Different forms of measurement and informants are used for the longitudinal study in which the following areas are assessed; individual parent functioning, parent interaction and family environment, individual child functioning, and parent-child interaction (Zucker & Fitzgerald, 1991). The majority of data collection takes place in the family's home. Data used in the current study were obtained from the first wave of data collection (Table 2). However, the family comes to Michigan State University twice during the data collection procedure for laboratory interaction tasks and developmental assessments. Families are paid for their participation in the study.

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Measuring Demographic Information

A Demographic Questionnaire is administered to obtain background information (occupation, education, income, years married, number of children in the house, age, SES, education). This instrument provides the data from which the demographic items and information about marital history are coded. The SES of each parent is established using the occupation based Revised Duncan Socioeconomic Index (TSEI2; Stevens & Featherman, 1981). Family SES is coded using father's SES when his was higher than mother's, and using the average of the mother's and the father's when hers is higher.

Measuring Parent's Personality

Parents' personality is assessed by the California Adult Q-Sort (Block, 1961/1978). This instrument contains 100 statements about personality that cover the domain of manifest behavior in social context, and that also encompass the psychological processes that may regulate social action. Items are sorted by an observer into a fixed, normally distributed set, ranging from most to least salient for that individual. The validity and usefulness of Q-sort personali ty descriptions has been demonstrated (Block, 1961; Funder, Block, & Block, 1983; Block, Block, & Keyes, 1988; Shedler & Block, 1990). A member of the research team, administers the Diagnostic Interview Schedule (DIS), and after

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Each of the 100 CAQ items has a value indicating its conceptual salience in defining ego-resiliency or ego undercontrol. These values were derived by having psycholog ists arrange the items so as to portray these concepts in prototypical form (Block, 1961/1978). The correlations between actual Q description of each parent and the ego undercontrol and ego-resiliency prototypes measure the similarity between the personality of the parent and the criterion definitions. For example, a high correlation between the Q description and "ego-resiliency" means that the parent was similar or close to the prototypical definition of being resilient. Each parent receives an ego-resiliency score and an ego undercontrol score. According to Block and Block (1979) the ego undercontroller has a low response threshold, manifests desires and impulses directly into behavior, wants the immediate gratification, is easily distracted, and is emotionally labile. Examples of CAQ items having high positive salience for concept of ego undercontrol are, "Has a rapid personal tempo" (Item 20), "Thinks and associates to ideas in unusual ways" (Item 39), "Is unpredictable and changeable in behavior and attitude" (Item 50), and "Unable to delay gratification" (Item 53).

The ego resilient person uses coping or problem solving behavior under stress, shows more flexible responses to

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changing circumstances, modifies personal tempo appropriately within the boundary of social context, and recovers well after stress. Some CAQ items having the high positive salience values for the concept of ego resiliency are "Is a genuinely dependable and responsible person" (Item 2), "Is productive" (Item 26), "Has the capacity for close relationship" (Item 35), and "Has insight into own motives and behavior" (Item 60). The ego resilient person is considered to be an adaptive and functional individual, whereas the ego undercontroller is considered to have poor adaptive behavior. Block, Block and Keyes (1988) found that during early childhood the presence of ego undercontrol predicted subsequent drug use in adolescent boys. The presence of ego undercontrol and the absence of ego-resiliency were positively related to drug use.

Measuring Parent's Current Depression

Current depression is measured using the Short Form of the Beck Depression Inventory (BDI) (Beck & Beck, 1986). The BDI contains 13 groups of statements concerning different areas of functioning that are affected by depression. The respondent picks the statement in each group that best describes how he/she feels that day. Scores on the long and short forms of the BDI have been found to correlate between .89 and .97 (Beck, Steer, & Garbin, 1988). Since the BDI is based on subjective feelings of depression, it is difficult to discriminate sad individuals from clinically depressed individuals (Hesselbrock, Hesselbrock,

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Tennen, Meyer, & Workman, 1983). For the present study this is not a problem because the BDI is not used to diagnose subjects as clinically depressed. It is more concerned with how the level of current subjective feelings of depression are related to other risk factors in the alcoholic family environment.

Measuring Parent's Antisocial Behavior

Parent's history of antisocial behavior is assessed by the Antisocial Behavior Checklist, a forty-six item, self-administered inventory which includes items from ten content domains that assess a variety of child, adolescent, and adult antisocial behaviors (Zucker & Noll, 1980). Antisocia l behaviors include parental defiance, sexual behavior, delinquent behavior, physical aggression, sensation seeking, job related antisocial behavior, leaving the field, school related antisocial behavior, trouble with the law, and marital behavior. The instrument has previously been used successfully in the assessment of adolescent antisocial behavior (Zucker & Barron, 1973), and has been shown to have appropriate internal consistency (coefficient alpha = .93) and test-retest reliability (.91 over four weeks) in a series of reliability and validity studies ranging from male and female college students to male and female inmates (Zucker & Noll, 1980). Parent's Total Antisocial Behavior (TASB) score indicates the level of his/her lifetime antisocial activity.

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Measuring Parent's Lifetime Drinking Behavior

A Drinking and Drug History Questionnaire (DDH; Zucker, Fitzgerald, & Noll, 1990) is administered to parents to determine the nature of their drinking behaviors. From these data, the questions on alcohol involvement on the Diagnostic Interview Schedule (Robins, Helzer, Croughan, & Ratcliff, 1980), and the short form of the Michigan Alcoholism Screening Test (Selzer, 1975), a composite measure of lifetime alcohol related difficulties, the Lifetime Alcohol Problems Score (LAPS) (Zucker, 1991), is generated. The LAPS scales the extent to which alcohol related difficulties have taken place over the life course (Zucker, 1991). The LAPS measures three different areas of alcohol involvement: age of onset - assessed by age of first drunkenness, indicating how early in the life course alcohol related difficulties appear; variety of problems, involving the number of areas in which drinking problems were reported at any time during the life; and density of alcohol problems weighted for the extent of their presence over the life course, involving a measure of interval between most recent and earliest drinking problems, corrected for current age. Scores for the three areas are standardized, then summed, to give a composite index of the extent of alcohol related problems that span the individual's drinking career.

Measuring Mother's Social Support

Mother's social support is strongly related to her social competence or well-being (Belsky, 1984; Colleta,

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1981; Powell, 1980). A necessary prerequisite of social support is the existence of at least one significant intimate relationship with another person (Sullivan, Maguin, Fitzgerald, Zucker, & Noll, 1990). Though both parents are interviewed independently with a modified version of the Norbeck Social Support Questionnaire (NSSQ; Norbeck, Lindsey, & Carrieri, 1981)), only data from mother was used in this study. The Norbeck Social Support is designed to measure functional (affect, affirmation, and aid) and quantitative aspects of the social network such as duration of the relationship, frequency of contacts and recent loss. Each of the functional items and network property items has strong test-retest reliability, ranging from .83 to .92 (Norbeck et al., 1981). Norbeck et al. also found that in comparison with Cohen and Lazaurss' Social Support Questionn aire there were rough parallels between information support and affirmation (.33) and emotional support and affect (.51). A modified version of the Norbeck measure used in the current study retains the original measures of the instrument, but also adds items for assessment of network density, interpersonal similarity, and organizational support. As a result, the validity and reliability of the instrument are unknown. However, the addition of a small number of items should have minimal affect on the reliability of the original Norbeck's instrument (Weil, 1987). A modified version of the Norbeck measure was designed to measure functional (emotional and instrumental

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support) and quantitative aspects of social network. For the present study, maternal report of emotional and instrumental support from spouse, other family members or relatives, friends, and other sources is used.

Measuring Parent's Stressful Events

Life stress of alcoholic families is assessed with the Hassles and Uplifts Scales (Kanner, Coyne, Schaefer & Lazarus, 1981). These scales measure daily minor stresses and pleasures that characterize everyday life, that are presumed to be related to the individual's adaptive functioning (Kanner et al, 1981). The scales include 117 hassles and 135 uplifts that are rated on a three point scale for how strongly or how often each occurred. Two different scores are derived from these self-ratings: frequency (number of items endorsed) and intensity (cumulate d severity divided by frequency). For the present study the frequency of hassles was used as an index of the level of each parent's stress, since the intensity variable asking the severity of each hassle may be contaminated with parent's current subjective feeling of depression. Only the quantitative number of hassles in the past month was entered in data analysis. Test-retest correlations are high for frequency scores (e.g., hassles .79), but only moderately good for intensity scores (e.g., hassles .48; Kanner et al., 1981).

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1980) consists of 91 socialization-relevant statements that are administered in a Q-sort format with a forced-choice distribution. The items are appropriate for the description of both maternal and paternal child-rearing attitudes and values. The items are sorted by each parent into a fixed distributed set, ranging from most true to most untrue for a target child. The factors of parental child-rearing practices related to this study are levels of emotional support to children, ways that the parents manage their child's feelings and impulses and encourage their child's achievement. Davies, Zucker, Noll, & Fitzgerald (1991), using principal component extraction, found two factors each for mothers and fathers; for mothers, positive vs. negative affective and authoritarianism vs. child-centeredness parenting, and for fathers, nurturance vs. disengaged affective and;authoritarianism vs. liberal parenting. The current study used the two factors to investigate differences in parenting related to the level of children's adaptive functioning. In addition, an intra-dyad Parent Agreement Index (PAI) was computed by correlating mother's and father's responses across all 91 items of CRPR (Block, Block, & Morrison, 1981). A high PAI score indicates that father and mother agree on parenting behavior.

Measuring Child's Adaptive Functioning

Child Behavior Problems. Parents report their child's behavior problems by completing the Child Behavior Checklist (Achenbach & Edelbrock, 1983), which yields standardized

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scores on social competence and behavioral problems. The CBCL generates the Total Behavior Problems score and the scores for two broad-band scales developed from eight subscales; Internalizing psychopathology (social withdrawal, depression, immaturity, and somatic complaints), Externalizing psychopathology (schizoid, aggressive, and delinquent), and sex problem which is a subscale that belongs to neither of the two broad-band scales. Achenbach et al. provided a possible cutoff to discriminate between children likely to resemble their clinical sample and those more likely to resemble their nonclinical sample. Total Behavior Problem (TBP) raw scores of 43 (T-score of 64, 90th percentile) and above are considered in the "clinical range," whereas a raw score of 42 and below belongs to the "normal range." For Internalizing and Externalizing scores, a T-score of 63 (90th percentile) represents a cutoff between the "clinical range" and the "normal range." Jacob and Leonard (1986) used a T-score 70 (99th percentile) as a criterion to identify severely impaired children of alcoholics and of depressed. They found that there was difference in alcohol family environment between of severely impaired COAs and of impaired COAs.

Applying Achenbach's criterion to alcoholic families in the MSU Longitudinal Study, Reider (1991) found that one-third of the parents (90 families) in her study rated their children in the "clinical range" in the areas of the Total Behavior Problem and Externalizing Behavior. However, since

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the Child Behavior Checklist was normed on children 4 to 16 years of age and there were many three years old in the MSU Longitudinal Study, Reider (1991) decided to use raw scores in her analysis. Reider found that the raw and T-scores were quite congruent, thus, the present study used T-scores for data analysis. CBCL data for children who were less than 4 years old were scored using 4-5 year old scales and T-scores. Children were divided into two groups; COAs in the "clinical range" and COAs in the "normal range."

Child Ego Resiliency and Ego Control. These aspects of children's personality was assessed by the California Child Q-Sort (CCQ, Block & Block, 1979). One-hundred brief descriptive statements are on cards which an observer sorts into a normally distributed pattern that ranges from items that are the most and least salient descriptors of the child. The CCQ is completed by the clinician who conducts the intellectual assessment of the child. Like adult personality Q-sort, CCQ prototypes are used to produce an ego-resiliency score and an ego undercontrol score for each child. The reliabilities of the undercontrol and ego-resilient criterion definitions are .91 and .90 (Block & Block, 1979).

Child Intellectual Ability. The level of children's adaptive functioning measured by the California Child Q-Sort and the Child Behavior Checklist was be compared to children's performance on the Revised Yale Developmental Schedules (RYDS; Provence, 1964). The RYDS was used to

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evaluate children's development in five areas: gross motor, fine motor, adaptive, language, and personal/social. Each examination provides a developmental age in each of the five areas along with an overall developmental quotient (DQ). Previous work with the RYDS has demonstrated its value in the study of early developmental functioning (Noll & Kulkarni, 1989).

Child's Temperament. Parents completed the Dimensions of Temperament (DOTS; Lerner, Palermo, Spiro, & Nesselroade, 1982) for the target child. The DOTS contains 34 items measuring five dimensions of temperament: Activity level, Attention Span/Distractibility, Adaptability/Approach-Withdrawal, Rhythmicity, and Reactivity. Reactivity is a combined category of intensity, threshold, and activity level. Lerner et al. tested nursery school, elementary school, and university students with an 89-item version of the DOTS. Using factor analysis they constructed the 34-item version of the DOTS which consisted of only those items that were invariably present in the factor structure of all age groups. Reliability for each group ranged from .87 to .96 for Activity Level, from .69 to .86 for Attention span/Distractibility, from .50 to .81 for Adaptability/Approach-withdrawal, from .64 to .76 for Rhythmicity, and from .31 to .57 for Reactivity.

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High Risk Families

The present study assumed that members of alcoholic families would display more risk signs than their counterpartners in comparison families. Simple t-tests for between-family differences on all variables assessed in the study were performed in order to validate the presence of presumptive differences between alcoholic and nonalcoholic families. To the extent that between group differences exist, such differences suggest different levels of risk status in the social environment of children. In this analysis the interrelationships among variables in the child's social environment are not considered. The interrelationships among variables are evaluated later, using multiple regression and path analytic techniques. T-tests were used to compare alcoholics and nonalcoholics, wives of alcoholics and wives of nonalcoholics, and COAs and nonCOAs on all variables assessed in the study.

Secondary analysis was conducted within only alcoholic families. Based on children's Total Behavior Problems (TBP) scores, as rated by parents on the Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1983), alcoholic families

were divided into two groups; COAs falling in the "clinical range (TBP raw score > 42 (90th percentile)" and COAs falling in the "nonclinical range (TBP raw score <= 42)." Applying this criterion to alcoholic families in the MSU Longitudinal Study, Reider (1991) found that about 30 percent of children fell in the "clinical range" on Total Behavior Problems and Externalizing Behavior. The present study confirms Reider's finding in that 30 percent of the children in alcoholic families were rated in the "clinical range."

Parental Characteristics

For all the parental variables alcoholics displayed more negative characteristics than did nonalcoholics (Table 3). However, wives of alcoholics displayed more negative characteristics than did wives of nonalcoholics on only two variables; Lifetime Alcohol Problems and lifetime Antisocial Behavior. These results are consistent with the general literature which finds, that alcoholics display more negative characteristics than nonalcoholics, whereas there are comparatively fewer differences between wives of alcoholics and wives of nonalcoholics. In addition, there were differences in demographic characteristics of alcoholic and comparison families; comparison families had higher SES [$t(173)=3.68$, $p<.000$], longer marriage [$t(145)=3.11$, $p<.001$], and more years of education than did parents in alcoholic families [for father, $t(176)=4.35$, $p<.000$; for mothers, $t(179)=1.92$, $p<.05$]. Mothers in alcoholic families

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Table 3

Mean Scores and Standard Deviations for Parental Variables for Alcoholic Families and Comparison Families

	Alcoholic Families		Comparison Families				
	M	SD	M	SD	t	df	p
Alcohol Problems							
Mothers	10.07	2.05	8.94	1.29	-3.26	190	.000
Fathers	10.63	1.84	7.25	1.67	-11.40	189	.000
Antisocial Behavior							
Mothers	12.69	7.55	7.44	4.77	-3.76	165	.000
Fathers	23.10	12.91	11.03	5.71	-5.31	167	.000
Depression							
Mothers	3.59	3.71	3.22	3.31	-.55	172	ns
Fathers	3.24	3.34	1.31	1.26	-3.41	170	.000
Personality: Ego Resiliency							
Mothers	.03	.37	.15	.37	1.80	170	ns
Fathers	-.11	.30	.23	.30	6.17	159	.000
Personality: Ego Undercontrol							
Mothers	-.08	.20	-.12	.18	-1.32	170	ns
Fathers	.05	.20	-.12	.21	-4.42	159	.000
Stress							
Mothers	21.61	12.69	18.62	12.05	-1.27	157	ns
Fathers	20.10	15.09	15.66	10.00	-1.64	155	.10
Social Support							
Mothers	15.81	2.92	16.45	1.99	1.16	153	ns
Fathers	15.49	3.52	15.50	3.59	.02	151	ns

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were younger than were mothers in comparison families [t(162)=1.66, p<.10]. There was no group difference in the number of children per family.

Looking more closely at the alcoholic families, the differences between alcoholic families of children in the "clinical range" and alcoholic families of children in the "nonclinical range" were especially interesting (Appendix B, Table 18). In contrast to the findings for wives in alcoholic and comparison families on all parental variables except Ego Undercontrol and Social Support, wives in alcoholic families of children in the "clinical range" displayed more negative characteristics than did wives in alcoholic families of children in the "nonclinical range" (Lifetime Alcohol Problems [t(134)=-3.52, p<.00], Antisocial Behavior [t(129)=-2.51, p<.01], Current Depression [t(129)=-3.08, p<.00], Ego Resiliency [t(124)=2.52, p<.01], and Current Stress [t(115)=-2.28, p<.02]. Thus, wives in alcoholic families of children in the "clinical range" showed more negative characteristics than their counterparts in alcoholic families of children in the "nonclinical range." In contrast, there were no differences between alcoholic fathers of children in the "clinical range" and alcoholic fathers of children in the "nonclinical range" except Lifetime Alcohol Problem [t(134)=-2.13, p<.05] and Current Depression [t(127)=-3.55, p<.00].

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Children's Characteristics

As indicated in Table 4, children in comparison families had slightly better scores on the Revised Yale Developmental Schedules than did the children in alcoholic families and were rated as being more Ego Resilient than were COAs.

However, there were no differences in parental reports of behavior problems (CBCL) between children in comparison families and those in alcoholic families (Table 5). Jacob and Leonard (1986) and Fitzgerald, Sullivan, Ham, Zucker, Bruckel, Schneider, and Noll (in press) reported the same results even though the two studies involved different age groups. Jacob et al. studied COAs between 10 and 18 years of age, whereas Fitzgerald et al. studied 3-year-old COAs. There were few differences in parental perceptions of their children's temperament between alcoholic and comparison families (Table 5). Parents in alcoholic families perceived their children as being more reactive than comparison parents perceived their children. Fathers in comparison families perceived their children as more attentive than did fathers in alcoholic families, and mothers in alcoholic families perceived their children as more adaptable than did comparison mothers. Compared to the findings reported for parents within alcoholic families, the differences between parents in comparison families and alcoholic families in their perceptions of their children are not impressive or striking.

Table 4

Mean Scores and Standard Deviations for Personality and General Developmental Status for COAs and Children in Comparison Families

	Alcoholic Families		Comparison Families				
	M	SD	M	SD	t	df	p
Personality							
ER	.10	.32	.24	.26	2.39	158	.01
EU	.06	.19	.03	.19	-.93	158	ns
RYDS Developmental Status							
GM	49.92	13.07	52.32	11.43	.97	157	ns
FM	52.27	11.41	56.09	10.16	1.77	157	.05
AD	53.28	10.12	56.51	9.00	1.69	157	.05
LD	52.47	11.87	57.56	10.75	2.03	157	.05
PSD	53.75	10.41	55.86	9.54	1.92	157	.05
DQ	52.95	10.21	55.86	9.39	1.46	157	.05

Note. ER=Ego Resiliency. EU=Ego Undercontrol. GM=Gross Motor Development. FM=Fine Motor Development. AD=Adaptability. LD=Language Development. PSD=Personal/Social Development. DQ=Overall Developmental Quotient.

Table 5

Mean Scores and Standard Deviations for Children's Behavior Problems and Temperament in Alcoholic and Comparison Families

	Alcoholic Families		Comparison Families				
	M	SD	M	SD	t	df	p
CBCL							
Total Behavior Problems							
Mothers	57.30	9.63	55.60	8.35	-1.04	189	ns
Fathers	56.56	10.45	54.62	10.68	-1.06	186	ns
Externalizing Behavior							
Mothers	56.53	10.49	54.47	9.38	-1.16	189	ns
Fathers	56.29	10.52	53.71	10.38	-1.40	186	ns
Internalizing Behavior							
Mothers	55.22	8.85	54.47	8.22	-.73	189	ns
Fathers	54.45	9.90	52.86	11.06	-.89	186	ns
Aggression							
Mothers	61.28	8.17	59.84	7.68	-1.04	189	ns
Fathers	61.32	8.42	59.81	7.88	-1.04	189	ns
Temperament							
Rhythmicity							
Mothers	5.22	2.16	5.42	2.41	.45	160	ns
Fathers	5.26	2.09	5.51	2.13	.61	160	ns

Table 5 (cont'd)

	M	SD	M	SD	t	df	p
Reactivity							
Mothers	3.27	1.70	2.55	1.80	-2.09	160	.05
Fathers	3.41	1.42	2.90	1.58	-1.76	160	.05
Attention Span/Distractibility							
Mothers	5.19	2.94	5.87	3.15	1.14	160	ns
Fathers	4.76	2.87	5.90	3.90	1.98	160	.05
Adaptability/Approach-Withdrawal							
Mothers	4.12	1.70	3.23	1.77	-2.62	160	.01
Fathers	3.97	1.47	3.90	1.62	-.22	160	ns
Activity Level							
Mothers	1.33	1.43	1.16	1.37	-.59	160	ns
Fathers	1.69	1.43	1.54	1.46	-.49	160	ns

Table 6

Correlations between RYDS and Children's Personality

	Children in Alcoholic Families		Children in Comparison Families	
	ER	EU	ER	EU
Gross Motor	.36**	-.19*	.30	-.38*
Fine Motor	.45**	-.22*	.52**	-.51**
Adaptability	.55**	-.24**	.42*	-.51**
Language	.48**	-.24*	.43*	-.40*
Personal/Social	.50**	-.22*	.48**	-.43*
Overall Development Quotient	.50**	-.25**	.44*	-.47*

* p<.05, ** p<.01. Two-tailed.

Note. ER=Ego Resiliency. EU=Ego Undercontrol.

As indicated in Table 6, Ego Resiliency was positively correlated with developmental status in all areas measured by the RYDS with the exception of comparison children's gross motor development. For both COAs and comparison children, Ego Undercontrol was inversely correlated with RYDS subscales and full scale DQ. However, the correlations for comparison children were substantially higher than those for COAs. Table 7 summarizes correlations for RYDS, children's Ego Resiliency and Undercontrol, and children's behavior problems. Table 8 shows correlations between parents' ratings of child temperament and behavior problems. Although there were significant correlations, most were of low order accounting for relatively little variance.

Parents' ratings of children's behavior problems were generally not significantly correlated with children's personality and RYDS developmental status (Table 7). However, maternal ratings of children's Externalizing Behavior in comparison families were associated positively with children's Ego Undercontrol and negatively with children's developmental status on all subscales but Gross Motor Development. Interparent agreement about behavior problems and correlations between children's temperament and behavior problems (Table 8) will be discussed later.

Results of t-tests for COAs falling in the "clinical range" and COAs falling in the "nonclinical range" showed few differences except children's behavior problems (CBCL): Children falling in the "clinical range" were rated as being

Table 7

Correlations among RYDS, Children's Personality and Behavior Problems

	Alcoholic Families							
	Mother				Father			
	TBP	EXT	INT	AGG	TBP	EXT	INT	AGG
ER	-.06	-.08	-.00	-.12	-.00	.00	-.02	.00
EU	.10	.15	.03	.20*	.15	.18*	.15	.15
GM	.04	.04	.08	-.01	.14	.12	.16	.10
FM	.02	.00	.10	-.08	.09	.04	.11	.07
AD	.01	-.01	.08	-.12	.09	.05	.11	.06
LAN	-.02	-.03	.02	-.10	.09	.06	.11	.08
PS	.02	-.01	.09	-.11	.05	.01	.08	.04
DQ	-.03	-.05	.04	-.13	.09	.05	.11	.05
	Comparison Families							
	Mother				Father			
	TBP	EXT	INT	AGG	TBP	EXT	INT	AGG
ER	-.24	-.34	-.17	-.18	.22	.05	.30	-.12
EU	-.21	.42*	-.08	.44*	-.07	-.02	-.24	-.02
GM	-.10	-.19	.04	-.01	.03	-.07	.10	-.02
FM	-.25	-.40*	-.02	-.22	.06	-.11	.21	-.16
AD	-.25	-.35*	-.05	-.23	-.01	-.13	.09	-.13
LAN	-.28	-.36*	-.13	-.19	-.01	-.10	.03	-.06
PS	-.22	-.36*	-.03	-.14	.09	-.07	.21	-.03
DQ	-.31	-.42*	-.10	-.25	-.04	-.18	.07	-.19

* p<.05, ** P<.01. Two-tailed.

Note. ER=Ego Resiliency. EU=Ego Undercontrol. GM=Gross Motor Development. FM=Fine Motor Development. AD=Adaptability. LAN=Language Development. PS=Personal/Social Development. DQ=Overall Development Quotient. TBP=Children's Total Behavior Problems. EXT=Children's Externalizing Behavior. INT=Children's Internalizing Behavior. AGG=Children's Aggression.

Table 8

Correlations between Temperament and Behavior Problems for Children in Alcoholic Families

	TBP	EXT	INT	AGG	FTBP
Mothers					
Activity	.16	.15	.08	.19*	.08
Attention	-.21*	-.23**	-.18*	-.35**	.01
Adaptability	.06	.12	-.03	.16	-.08
Rhythmicity	-.24*	-.19*	-.20*	-.19*	-.05
Reactivity	.21*	.26**	.21*	.25**	.13
Fathers					
Activity	.24**	.21*	.19*	.16	.25**
Attention	-.11	-.09	-.16	-.09	-.25**
Adaptability	.15	.14	.10	.21*	-.14
Rhythmicity	-.03	.01	-.04	-.00	-.16
Reactivity	.29**	.30**	.19*	.32**	.36**

* p<.05, ** p<.01. Two-tailed.

Note. TBP=Children's Total Behavior Problems (Mothers' Rating). EXT=Children's Externalizing Behavior (Mothers' Rating). INT=Children's Internalizing Behavior (Mothers' Rating). AGG=Children's Aggression (Mothers' Rating). FTBP=Children's Total Behavior Problems (Fathers' Rating).

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less Ego Resilient [$t(119)=1.71$, $p<.05$] and were perceived by their parents as more reactive [for mothers, $t(122)=-2.36$, $p<.02$; for fathers, $t(122)=-3.49$, $p<.001$] and active [for mothers, $t(122)=-1.75$, $p<.05$; for fathers, $t(122)=-2.23$, $p<.02$]. Mothers of children falling in the "clinical range" perceived their children as less rhythmic [$t(122)=2.77$, $p<.01$] and attentive [$t(122)=3.37$, $p<.001$] than did mothers of children falling in the "normal range" (Appendix B, Table 19).

Hierarchical Multiple Regression Analysis

In this and the next section, statistical analyses only involved the alcoholic families. The purpose of these analyses was to identify predictors of the child's adaptive functioning. Several multiple regression analyses were performed to test the predicted relationships as described previously.

The Dependent Variable

The Achenbach Child Behavior Checklist (CBCL) was selected as the primary measure for examining the level of children's adaptive functioning. The CBCL is a standardized instrument which, based on wide clinical and nonclinical samples, provides normative data for various age group on scales measuring children's behavior problems (Achenbach & Edelbrock, 1983). The CBCL is designed to obtain parents' descriptions of their children's problem behaviors related

to psychopathological symptoms and social competence in a standardized format. The present study used scores from scales except social competence for analysis since some items for social competence dealt with children's school performance and data on school performance were not available.

The CBCL provides scores for two broad-band scales (Internalizing and Externalizing) developed from eight subscales and a Total Behavior Problem score. The present study used the Total Behavior Problem (TBP) score as the primary dependent variable for multiple regression analysis and path analysis. There is a stronger association of children's clinical status with the TBP score than with other subscales in most age groups (Achenbach et al., 1983). According to Achenbach et al. the TBP score includes the problems of all the subscales, plus problems that were not included on the specific scales. Thus, the TBP score is more likely used to show clinical indications of problem behavior than either broad-band scale or any of the narrow band subscales. In the current study, there were high correlations between the TBP, the two broad-band scales, and the Aggression subscale for both mothers and fathers (Table 9). Although the strength of these intercorrelations seem to run counter to Achenbach et al.' claim that most clinically referred children do not show equally deviant behaviors in all areas, they do show that TBP seems more reasonable to use as the primary dependent variable, with

Table 9

Correlations among CBCL Scales for Father and Mother in Alcoholic Families

	TBP	EXT	INT	AGG
Total Behavior Problems (TBP)	--	.94**[a]	.93**	.84**
Externalizing (EXT)	.93**[b]	--	.81**	.87**
Internalizing (INT)	.88**	.74**	--	.72**
Aggression (AGG)	.75**	.84**	.54**	--

** p<.01, *** p<.001. Two-tailed.

a: Fathers' correlations are listed above the diagonal.
b: Mothers' correlations are listed below the diagonal.

Table 10

Interparental Agreement of Mother and Father CBCL Data

	Alcoholic Families (N=131)	Comparison Families (N=35)	Standardization Sample Reports[a] (N=33)
Total Behavior Problems	.34**	.58**	.75**
Externalizing	.39**	.57**	.74**
Internalizing	.27**	.59**	.75**
Aggression	.38**	.54**	.72**

** p<.01, *** p<.001. Two-tailed.

a: the Achenbach Standardization Group (Boys 4-5 years; Clinically referred children; Achenbach & Edelbrock, 1983).

other scale scores serving as secondary dependent variables for multiple regression analysis.

Reider (1991) using 90 alcoholic families in the MSU Longitudinal study reported low order correlations between mothers' and fathers' scale scores, indicating that parental perceptions of their children were discrepant. The present study confirms Reider's (1990) low interparent agreement about their children's behavior (Table 10). Compared with parents in alcoholic families, parents in comparison families showed slightly higher interparent agreement. However, in neither group did correlations between mothers' and fathers' scale scores approach the level of agreement reported by Achenbach and Edelbrock (1983) for clinically referred children. It is likely that the high interparent agreement for clinically referred children reflects a higher level of severity in children, with more consistency in their behavior across contexts.

One possible explanation for low interparent agreement in the current study is that alcoholic fathers may have less interaction with their young children, thus they do not have much chance of observing their children's behavior, compared with their wives greater involvement in caretaking activities. Reider compared mother and father CBCL scores separately against other measures of the children's behavior. She found that there was some congruence between mothers' report and those of independent observers, even though the level of congruence was quite low. Schaughency

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and Lahey (1985) compared teachers' ratings, fathers' ratings, and mothers' ratings of school children referred for treatment. They found that teachers' ratings of children's behaviors were significantly correlated with mothers' ratings, but not correlated with fathers' ratings, suggesting that the factors involved in paternal perceptions of child deviance might be different from maternal perception. However, interparent agreement about children' behaviors in Schaughency et al.' study was higher than that of the present study. There were some differences between Schaughency et al.' study and the current study; different age and risk status of subject children and different measurements for children's behavior problems. Considering that the children in the current study are of preschoolage, it is reasonable to suppose that mothers are more involved in their care and socialization. Wives of alcoholics do report that they perform more household tasks than their husbands (Moos & Moos, 1984). For these reasons, the present study used maternal ratings of children's behavior problems for analysis.

The Independent Variables

Hierarchical multiple regression analyses were performed on different dependent variables including mothers' report of TBP, Externalizing Behavior, and Aggressive Behavior, and fathers' report of TBP. Orders of entry of independent variables were determined by the theoretical model of the present study. Table 11 summarizes

Table 11

Order of Entry of Independent Variables and Measurements for Hierarchical Multiple Regression Analysis

Variables	Measurements
(1) Mothers' Depression	The Beck Depression Inventory (BDI)
(2) Fathers' Depression	" " "
(3) Mothers' Social Support	The Norbeck Social Support
(4) Mothers' Stress & Fathers' Stress	The Hassles and Uplifts Scales
(5) Mothers' Ego Resiliency & Fathers' Ego Resiliency	The California Adult Q-Sort (CAQ)
(6) Fathers' Lifetime Alcohol Problems & Antisocial Behavior	The Drinking & Drug History Questionnaire; The Antisocial Behavior Checklist
(7) Mothers' Lifetime Alcohol Problems & Antisocial Behavior	" " "
(8) Child's Temperament: Reactivity, Activity, Attention Span/Distractibility	The DOTS-Child

the forced orders of independent variables and their measurements for the analysis. Independent variables that were serving as the initial variables in the causal relations were forced into the equation first; parent's Antisocial Behavior and Lifetime Alcohol Problems. However, as the two variables were highly correlated, they were entered simultaneously. If it was not possible to determine the order of two variables, they were entered simultaneously, for example were mothers' and fathers' stress, Ego Resiliency, and children's temperament variables.

Even though parents' Antisocial Behavior and Lifetime Alcohol Problems were serving as the initial variables in the causal model, it was expected that such as parents' psychopathology, including depression, caused impairment in their parenting, which was directly related to children's behavior problems (Rutter, 1990). The present study planned to enter the parenting variable first, and parents' Current Depression second that was causally related to parenting. However, it did not find significant the effect of parenting variable on children's behavior problems, thus it dropped the variable from analysis, which was discussed below. The secondary analysis was conducted in reversed orders of entry of independent variables; mothers' Depression, fathers' Depression, mothers' Social Support, mothers' and fathers' Stress, mothers' and fathers' Ego Resiliency, fathers' Lifetime Alcohol Problems and Antisocial Behavior, and

mothers' Lifetime Alcohol Problems and Antisocial Behavior. Actually, the final results of analyses using different orders of independent variables showed the same result.

Before discussing the results of hierarchical multiple regression analysis, there are several things that should be noted. First, correlations between the independent variables ranged from .00 to .60 (less 1 % of the variables were above .50), suggesting that there was no serious multicollinearity problem (Table 12). However, since almost all the independent variables were correlated, it may be difficult to isolate the specific effect of the independent variables in multiple regression analysis, despite the lack of multicollinearity problem. This issue will be discussed later.

Second, the maternal social support included only spouses' and other family members' emotional and instrumental aids, since they were significantly associated with the variables in Table 11. Mothers' social support was strongly correlated with spousal support ($r=.61$, $p<.01$, two-tailed, for emotional aid; $r=.60$, $p<.01$, two-tailed, for instrumental aid), and with other family members' support ($r=.47$, $p<.01$, two-tailed, for emotional aid; $r=.31$, $p<.01$, two-tailed, for instrumental aid). However, alcoholics' social support did not show as strong association with spousal support as the maternal social support did ($r=.44$, $p<.01$, two-tailed, for spouses' emotional aid; $r=.39$, $p<.01$, two-tailed, for spouses' instrumental aid; $r=.31$, $p<.01$,

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* p<.

Table 12

Observed Correlations among Parental Variables and Children's Behavior Problems in Alcoholic Families

	MLAPSR	MTASB	MER	MSTRESS	MTBDI	MSUPPORT
MLAPSR	--					
MTASB	.54**	--				
MER	-.09	-.23*	--			
MSTRESS	.18*	.27**	-.21*	--		
MTBDI	.16	.33**	-.30**	.44**	--	
MSUPPORT	-.14	-.21*	.22*	-.21*	-.39**	--
FLAPSR	.15	.25**	-.15	.20*	.27**	-.17
FTASB	.11	.29**	-.20*	.14	.16	-.10
FER	-.13	-.24*	.38**	-.11	-.11	.32**
FSTRESS	.00	.02	-.08	.22*	.16	-.04
FTBDI	.26**	.23**	-.28**	.27**	.45**	-.29**
MTBP	.26**	.29**	-.21*	.28**	.38**	-.23*
MEXT	.29**	.32**	-.21*	.28**	.36**	-.21*
MINT	.17	.17	-.21*	.26**	.34**	-.20*
MAGG	.24**	.30**	-.16	.26**	.27**	-.11
FTBP	.18*	.21*	-.19*	.16	.12	-.20*
FEXT	.19*	.21*	-.19*	.16	.11	-.19*
FINT	.15	.18*	-.15	.11	.13	-.20*
FAGG	.13	.25*	-.15	.20*	.07	-.13
REACT	.13	.14	-.21*	.13	.18*	-.08
MATTEN	-.03	-.14	.02	.07	.04	-.01
ACTIV	.06	.17	-.22*	.22*	.21*	-.11

* p<.05, ** p<.01. Two-tailed.

Table 12 (cont'd)

	FLAPSR	FTASB	FER	FSTRESS	FTBDI
MLAPSR					
MTASB					
MER					
MSTRESS					
MTBDI					
MSUPPORT					
FLAPSR	--				
FTASB	.57**	--			
FER	-.30**	-.24**	--		
FSTRESS	.27**	.18	-.20*	--	
FTBDI	.34**	.28**	-.14	.60**	--
MTBP	.22**	.21*	-.10	.20*	.41**
MEXT	.22**	.22*	-.14	.19*	.36**
MINT	.14	.20*	-.03	.14	.37**
MAGG	.20*	.14	-.19*	.18	.28**
FTBP	.29**	.27**	-.14	.29**	.36**
FEXT	.30**	.27**	-.13	.31**	.35**
FINT	.25**	.31**	-.09	.23**	.34**
FAGG	.31**	.25**	-.10	.32**	.38**
REACT	.21*	.20*	-.08	.13	.22**
MATTEN	.01	.08	.07	.08	.05
ACTIV	.16	.07	.08	.18	.26**

* p<.05, ** p<.01. Two-tailed.

Table 12 (cont'd)

	MTBP	MEXT	MINT	MAGG	FTBP	FEXT
MTBP	--					
MEXT	.93**	--				
MINT	.88**	.71**	--			
MAGG	.75**	.84**	.54**	--		
FTBP	.34**	.34**	.26**	.32**	--	
FEXT	.33**	.39**	.23**	.39**	.94**	--
FINT	.30**	.27**	.27**	.25**	.93**	.81**
FAGG	.29**	.35**	.18*	.38**	.84**	.87**
REACT	.30**	.34**	.25**	.35**	.29**	.37**
MATTEN	-.20*	-.23**	-.18*	-.35**	.01	-.03
ACTIV	.25**	.23*	.17	.22*	.21*	.20*

	FINT	FAGG	REACT	MATTEN	ACTIV
FINT	--				
FAGG	.72**	--			
REACT	.21*	.29**	--		
MATTEN	-.02	.02	-.35**	--	
ACTIV	.18	.24**	.11	.02	--

Note. MLAPSR=Mothers' Lifetime Alcohol Problems. MTASB=Mothers' Antisocial Behavior. MER=Mothers' Ego Resiliency. MSTRESS=Mothers' Stress. MTBDI=Mothers' Current Depression. MSUPPORT=Mothers' Social Support. FLASPR=Fathers' Lifetime Alcohol Problems. FTASB=Fathers' Antisocial Behavior. FER=Fathers' Ego Resiliency. FSTRESS=Fathers' Stress. FTBDI=Fathers' Current Depression. MBPT=Mothers' Ratings of COAs' Total Behavior Problems. MEXT=Mothers' Ratings of COAs' Externalizing Behavior. MINT=Mothers' Ratings of COAs' Internalizing Behavior. MAGG=Mothers' Ratings of COAs' Aggression. FBPT=Fathers' Ratings of COAs' Total Behavior Problems. FEXT=Fathers' Ratings of COAs' Externalizing Behavior. FINT=Fathers' Ratings of COAs' Internalizing Behavior. FAGG=Fathers' Ratings of COAs' Aggression. REACT=Parental Ratings of Child Reactivity. MATTEN=Mothers' Ratings of Child Attention Span/Distractibility. ACTIV=Parental Ratings of Child Activity Level.

two-tailed, for other family members' emotional aid; r=.38, p<.01, two-tailed, for other family members' instrumental aid). Alcoholic fathers' social support that was weakly correlated with child behavior problems (r=-.19, p<.05, two-tailed) was not used for analysis of the current study.

Third, based on correlations observed between temperament and behavior problems scores three aspects of children's temperament were selected as the independent variables; Reactivity, Activity Level, and Attention Span/Distractibility (Table 8). For Reactivity and Activity Level, parent's scores were combined into a single score, whereas only mothers' perception of Attention Span/Distractibility was used. Reactivity consisted of items that were derived from the categories of activity level, intensity, and threshold (Lerner, Palermo, Spiro, & Nesselroade, 1982). It was not significantly correlated with parents' perception of Activity Level (r=.11, ns), but was negatively correlated with maternal perception of Attention Span/Distractibility (r=-.35, p<.01, two-tailed). All these variables were correlated with the dependent variables. Furthermore, parents' perception of Reactivity and mothers' perception of Attention Span/Distractibility showed some congruence with reports of an observer. Parents' perceptions of Reactivity were positively correlated with children' Ego Undercontrol (r=.39, p<.01, two-tailed), and mothers' perception of Attention Span/ Distractibility was correlated positively with children's

Ego Resiliency (r=.24, p<.01, two-tailed) and negatively with children's Ego Undercontrol (r=-.26, p<.01, two-tailed).

Fourth, parenting variables were dropped from multiple regression analyses and path analysis, because they were not significantly associated with children's behavior problems (see Appendix B, Table 20). Only alcoholic fathers' positive affective parenting was slightly correlated with children's behavior problems, but it did not account for variance in multiple regression analysis if it was entered. In addition, only mothers' positive affective parenting in comparison families was significantly associated with maternal ratings of children's behavior problems. Finally, Ego Undercontrol was also dropped from analysis because it was not significantly associated with other variables.

Predicting COAs' Behavior Problems

Table 13 summarizes the significant results of hierarchical multiple regression analysis on different dependent variables including mothers' ratings of Total Behavior Problems, Externalizing Behavior, and Aggressive Behavior, and fathers' ratings of Total Behavior Problems. Table 13 displays the final results of regression analysis after all the independent variables in Table 11 were forced to enter, Table 14 shows the effects of demographic variables, whereas Table 15 displays the final results of regression analysis after entering some combined variables developed from the independent variables in Table 11.

When all the independent variables were forced into the equation, no specific variable predicted mothers' ratings of TBP and Externalizing Behavior (Table 13). Although the specific effects of the independent variables were not found, all the independent variables combined did predict mothers' ratings of the TBP, Externalizing Behavior, and Aggression. In addition, all variables combined predicted fathers' ratings of TBP [Adj R^2=.29, F=3.50(14,72), p<.000]. Mothers' ratings of Attention Span/Distractibility predicted their children's Aggressive Behavior (Table 13), whereas fathers' Current Depression predicted their children's TBP (B=.34, T=2.32, sig.T=.02).

To examine possible effects of demographic variables on alcoholic families on children's behavior problems (see Appendix B, Table 21), Family SES, parents' Age, parents's Education, and Years of Marriage were added to the independent variables in Table 11. To control the effects of demographic variables and original independent variables, one multiple regression was conducted when demographic variables were entered first, followed by the forced entry of the independent variables, and another multiple regression was conducted when the independent variables were forced into the equation, followed by free entry of demographic variables. The results showed that controlling for either set of independent variables did not decrease the effect of the other set of variables.

Demographic variables contributed significantly to

children's TBP, Externalizing Behavior, and Aggression (Table 14). However, Years of Marriage was responsible for an increase in variance for children's TBP and Externalizing Behavior. When adding only Years of Marriage into the equation, it accounted for a significant portion of the variance of children's behaviors (R^2=.47, Adjusted R^2=.34 for TBP and Externalizing Behavior). However, entering all demographic variables except Years of Marriage into the equation did not account for additional variance (R^2=.42, Adjusted R^2=.25 for TBP), beyond that accounted for by all independent variables excluding demographic variables (Table 13). For children's Aggression, Years of Marriage, Family SES, Parents' Age, and Parents' Education contributed significantly to children's behavior. Parents' perception of Reactivity predicted children's TBP (B=-.28, T=2.25, Sig. T=.03). Mothers' Education and maternal ratings of Attention Span predicted children's Aggression: children having mothers with high education (B=.30, T=2.19, Sig. T=.03) and/or perceived as less attentive by their mothers (B=-.32, T=-2.80, Sig. T=.01) were seen as more aggressive. In addition, all the independent variables combined predicted fathers' ratings of TBP [Adjusted R^2=.26, F=2.31(20, 56), p<.000], but the total amount of accounted variance decreased from .29 to .26.

Given the findings of multiple regression analysis, it was evident that there was a multicollinearity problem despite the fact that correlations between the independent

Table 13

Multiple Regression Analysis I: Parental Variables, Children's Temperament, and Children's Behavior Problems

	R	R^2	Adj. R^2	Standard Error	F	df	p	Beta	T	Sig. T
TBP	.61	.38	.26	8.45	3.16	14,73	.007			
EXT	.64	.40	.29	9.12	3.54	14,73	.000			
AGG	.65	.42	.30	7.57	3.72	14,73	.000			
FTBP	.64	.41	.29	9.49	3.50	14,72	.000			
AGG										
Attention Span/Distractibility								-.25	-2.40	.02
FTBP										
Fathers' Depression								.34	2.32	.02

Note. TBP=Total Behavior Problems (Mothers' Rating). EXT=Externalizing Behavior (Mothers' Rating). AGG=Aggression (Mothers' Rating). FTBP=Total Behavior Problems (Fathers' Rating).

Table 14

Multiple Regression Analysis II: Parental and Demographic Variables, Children's Temperament, and Children's Behavior Problems

	R	R^2	Adj. R^2	Standard Error	F	df	p	Beta	T	Sig. T
TBP	.71	.51	.33	7.10	2.98	20,57	.001			
EXT	.71	.51	.33	8.17	2.92	20,57	.001			
AGG	.71	.51	.33	7.37	2.93	20,57	.001			
FTBP	.67	.45	.26	10.1	2.31	20,56	.007			
TBP										
Activity Level								.28	2.25	.03
AGG										
Mothers' Education								.30	2.19	.03
Attention Span/Distractibility								-.32	-2.80	.01
FTBP										
Mothers' Social Support								-.24	-2.05	.05

Note. TBP=Total Behavior Problems (Mothers' Rating). EXT=Externalizing Behavior (Mothers' Rating). AGG=Aggression (Mothers' Rating). FTBP=Total Behavior Problems (Fathers' Rating).

variables did not indicate a serious problem. To reduce the effects of multicollinearity, two variables which were theoretically related and highly correlated were combined into one variable (See correlation matrix in Table 12). Parent's Lifetime Alcohol Problem and Antisocial Activity were combined into a variable labeled as the Lifetime Difficulty. Parent's Current Stress and Depression were combined into a variable labeled Current Difficulty. Another series of hierarchical multiple regression analysis was conducted on the dependent variables (Table 15).

The new combined independent variables and old variables were forced into the equation in the same way that the variables were entered for the previous regression analysis. Even though some of the correlated variables were combined, the same pattern of results was found, so combining variables did nothing to reduce multicollinearity. No single independent variable predicted mothers' ratings of TBP. The independent variables as a whole significantly predicted maternal rating of children's TBP. Mothers' ratings of Attention Span/Distractibility predicted children's Aggressive behavior and fathers' Current Difficulty (combined of Current Stress and Depression) predicted children's TBP (of fathers' rating; B=.39, T=4.08, sig T=.00). Furthermore, parents' ratings of Reactivity predicted children' Externalizing Behavior. Once more all the equations turned out to be significant ($p<.000$).

Table 15

Multiple Regression Analysis III: Combined Parental Variables, Children's Temperament, and Children's Behavior Problems

	R	R^2	Adj. R^2	Standard Error	F	df	p	Beta	T	Sig. T
TBP	.57	.33	.25	8.31	4.34	10,89	.000			
EXT	.60	.35	.28	8.98	4.98	10,89	.000			
AGG	.59	.35	.28	7.57	4.79	10,89	.000			
FTBP	.59	.35	.28	9.50	4.80	10,88	.000			
EXT										
Reactivity								.19	1.98	.05
AGG										
Attention Span/Distractibility								-.28	-2.92	.00
FTBP										
Current Difficulty								.39	4.08	.00

Note. Combined Variables were used for analysis. Parent's Lifetime Difficulty=Lifetime Alcohol Problems and Antisocial Behavior. Parent's Current Difficulty=Current Stress and Depression. TBP=Total Behavior Problems (Mothers' Rating). EXT=Externalizing Behavior (Mothers' Rating). AGG=Aggression (Mothers' Rating). FTBP=Total Behavior Problems (Fathers' Rating).

Relationships between Parents' Psychopathological problems and Children's Behavior Problems

Having failed to find the effects of independent variables that specifically contributed to children's behavior problems, the present study examined the relationship between parents' psychopathology and child' behavior problems. This time, parents' Lifetime Alcohol Problem, Antisocial Behavior, and Current Depression were selected as independent variables, and the same dependent variables were used for a series of hierarchical multiple regression analysis (Table 16). Orders of entry of the independent variables were fathers' Lifetime Alcohol Problem and Antisocial Activity, mothers' Lifetime Alcohol Problems and Antisocial Activity, fathers' Current Depression, and mothers' Current Depression.

As indicated in Table 16, mothers' Current Depression and fathers' Current Depression predicted mothers' ratings of children's TBP. Mothers' Current Depression predicted their ratings of Externalizing Behavior, while fathers' Current Depression predicted their ratings of TBP. All the equations were significant ($p<.00$).

Next, the combined variables were used as independent variables; parent's Lifetime Difficulty (combined from Lifetime Alcohol Problem and Antisocial Activity) and Current Difficulty (combined from Current Stress and Depression) (Table 17). Mothers' Lifetime Difficulty predicted significantly their ratings of TBP, Externalizing

Table 16

Multiple Regression Analysis IV: Parental Psychopathology and Children's Behavior Problems

	R	R^2	Adj. R^2	Standard Error	F	df	p	Beta	Sig. T	T
TBP	.53	.25	.21	8.81	6.48	6,115	.000			
EXT	.48	.23	.19	9.88	5.76	6,115	.000			
AGG	.39	.15	.11	8.16	3.49	6,115	.003			
FTBP	.43	.19	.14	10.2	4.34	6,114	.000			
TBP										
Mothers' Depression								.23	2.44	.02
Fathers' Depression								.24	2.53	.01
AGG										
Mothers' Depression								.20	2.16	.03
FTBP										
Fathers' Depression								.28	2.87	.00

Note. TBP=Total Behavior Problems (Mothers' Rating). EXT=Externalizing Behavior (Mothers' Rating). AGG=Aggression (Mothers' Rating). FTBP=Total Behavior Problems (Fathers' Rating).

Table 17

Multiple Regression Analysis V: Combined Parental *Psychopathology* and Children's Behavior Problems

	R	R^2	Adj. R^2	Standard Error	F	df	p	Beta	Sig. T	T
TBP	.40	.16	.14	9.12	6.28	4,130	.000			
EXT	.42	.18	.15	9.91	7.07	4,130	.000			
AGG	.38	.15	.12	7.92	5.65	4,130	.000			
FTBP	.44	.19	.17	9.72	7.80	4,129	.000			
TBP										
Mothers' Lifetime Difficulty								.19	2.05	.04
EXT										
Mothers' Lifetime Difficulty								.22	2.40	.01
AGG										
Mothers' Lifetime Difficulty								.28	2.58	.01
FTBP										
Fathers' Current Difficulty								.28	3.27	.00
Fathers' Lifetime Difficulty								.21	2.48	.01

Note. Combined Variables were used for analysis. Parent's *Lifetime* Difficulty=Lifetime Alcohol Problems and Antisocial *Behavior*. Parent's Current Difficulty=Current Stress and *Depression*. TBP=Total Behavior Problems (Mothers' Rating). EXT=Externalizing Behavior (Mothers' Rating). AGG=Aggression (Mothers' Rating). FTBP=Total Behavior *Problems* (Fathers' Rating).

Behavior, and Aggression. Fathers' Lifetime Difficulty (B=.21, T=2.48, sig T=.01) and Current Difficulty (B=.28, T=3.27, sig T=.00) predicted significantly their ratings of TBP.

Path Analysis

Path analysis is used to study the causal relations among a set of variables by using partial and multiple correlation (Hunter & Gerbing, 1982). Hunter and Gerbing suggest that one of the major contributions of path analysis is that it decomposes relations among variables into numerical components, so separate effects and directions of relationships among variables may be observed. The present study used Hunter and Gerbings' PACKAGE program to conduct path analysis in prediction of COAs' Total Behavior Problems. Based on the theoretical model (Figure 1) and results of observed correlations among variables three path models with control of independent variables were used to predict COAs' TBP.

Path analysis used the same variables that were selected as independent variables for multiple regression analysis (Table 11). Before discussing the results of path analysis there are several points to note. First, the reliability of each variable was computed based on the subjects in the current study, since many reliabilities associated with the original measurements were calculated

based on middle-class samples. Reliabilities of the variables are presented in Appendix B, Table 22-24. Second, the observed correlations among variables were corrected for attenuation to remove measurement errors. And for each path model, path coefficients (beta weights), the level of significance, R^2, adjusted R^2, and overall chi square number and degree of freedom for test of overall fit of the model were presented.

Model 1: Parents in Alcoholic Families

There are two reasons why a measurement model strictly derived from a theoretical model (Figure 1) can not be tested. First, there are too many variables that are correlated with each other, so it is almost impossible to consider all causal relationships among variables in one model. The second reason, related to the first, is that the present study presumes to test a recursive path model that does not have causal cycles among variables because it is based on a cross-sectional design. There were significant correlations between alcoholics' and spouses' Lifetime Alcohol Problem and Antisocial Activity, and it is not clear the causal direction among these variables (Table 12). For instance, it is not clear whether the alcoholics' Alcohol Problem causes their spouses' Alcohol Problem or Antisocial Activity, or both. Or it may be possible that the causal direction goes from the alcoholic's wife's problem to the alcoholic's problem. Thus, the present study developed three path models predicting maternal ratings of children's

behavior problems; the first one for parents' combined variables, the second for alcoholics' variables, and the third for alcoholics' spouses' variables.

Based on the findings of multiple regression analysis and the theoretical model, the first path model tested the causal relationships among parental variables such as psychopathology (Lifetime Alcohol Problem and Antisocial Behavior), Ego Resiliency, Stress, and Depression by combining alcoholics' and their spouses' variables as parental variable (Appendix B, Table 22). Parents' perception of child's Reactivity was selected for path analysis since this variable showed the strongest correlation with child's TBP ($r=.30$, $p<.01$, two-tailed), and after child Reactivity entered a path model, the addition of parents' perception of child Activity level did not account for additional variance. Child's Attention Span/ Distractibility variable was dropped because it relied on only maternal report.

The basic logic underlying the first path model is that parents' lifetime psychopathological problems are causally related to their current difficulties including their personality problems, stress, and depression. Parents' problems in turn are posited to contribute directly or indirectly to their children's behavior problems (Figure 2).

As indicated in Figure 2, parents' psychopathology was positively related to parental stress and inversely related to Ego Resiliency. Their rigid personality contributed to

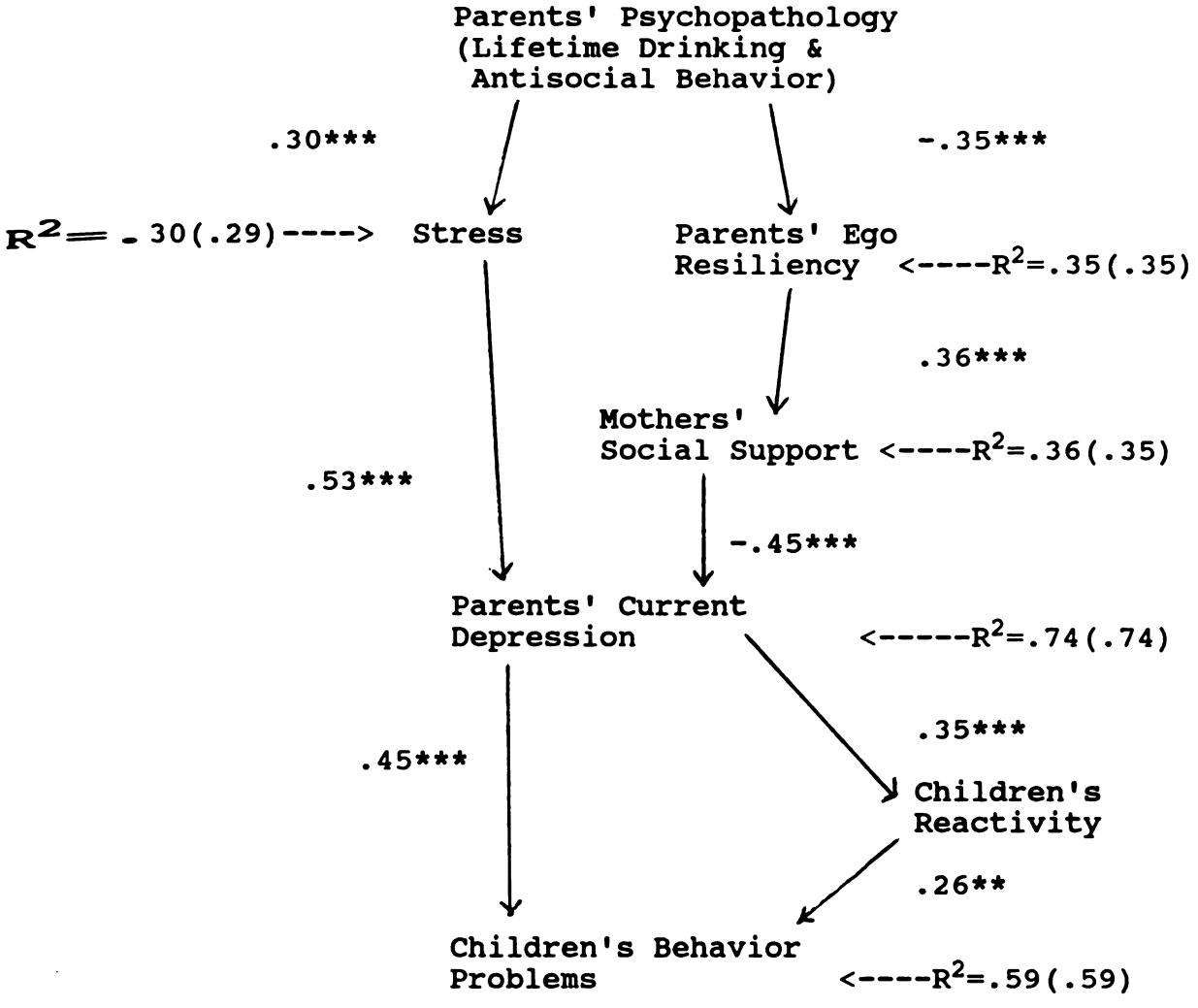

Figure 2

Path Model of Parents' Variables Predicting Mothers' Ratings of Children's Behavior Problems

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Path coefficient = beta weight
* p<.05, ** p<.01, *** p<.001
Variance information: (Adjusted R^2) in parentheses.
Overall Chi Square=12.94, df=12; n.s.

low emotional and instrumental support between spouses which in turn increased the level of parents' current depression (-.45, p<.001). High level of stress also increased the level of parents' current depression. Parents' current depression increased the level of children's behavior problems. Parents with higher levels of depression perceived their children as more reactive, and children who were perceived to be more reactive were perceived to have more behavior problems. Parents' psychopathological problems (alcohol problem and antisocial behavior) contributed to their child's behavior problem, but indirectly via parental ego resiliency, poor social support, high stress, and current depression. Overall the model significantly fit the data (Chi Square=12.94, df=12, ns).

In conclusion, the path analysis supported the hypothesis, that parents' antisocial behavior and lifetime alcohol problems predicted low ego resiliency and high stress. However, there was no support for the hypothesis that parents' low ego resiliency and high undercontrolling functioning in their personality lead to their stress that was related to their depression. Rather the path analysis showed that parents' ego resiliency predicted their social support, that decreased their depression. Because parenting variables were dropped from the path analysis, all the hypotheses related to parenting variables could not be tested in the present study. However, the correlation matrix (Appendix B, Table 20) showed that parents' ego

resiliency and depression were associated with alcoholic fathers' positive affective parenting, suggesting the possibility that parents' personality and depression might predict parenting. Instead of finding evidence that supported the effects of parental depression and child temperament on inadequate parenting, the path analysis indicated the direct effects of parental depression and child temperament on children's behavior problems.

This path model provides a clear cut idea about causal relationships among variables. However, it does not explain how the alcoholic and his spouse function in relation to their children's adaptive behavior. The next two path models were constructed to test causal pathways independently for father and mother effects on children's behavior.

Model 2: Alcoholic Fathers

The second model was designed to test how alcoholic fathers influenced their children's adaptive behavior (Appendix B, Table 23). Figure 3 shows the results of the path analysis. Fathers with high antisocial behavior showed high levels of alcohol problems. The high path coefficient between the two variables (.76) was actually a reproduced correlation between the variables, suggesting that the two constructs functionally are the same. For alcoholics' spouses the path coefficient number between the two variables was .74. However, further analysis indicated that the two variables were highly associated but different

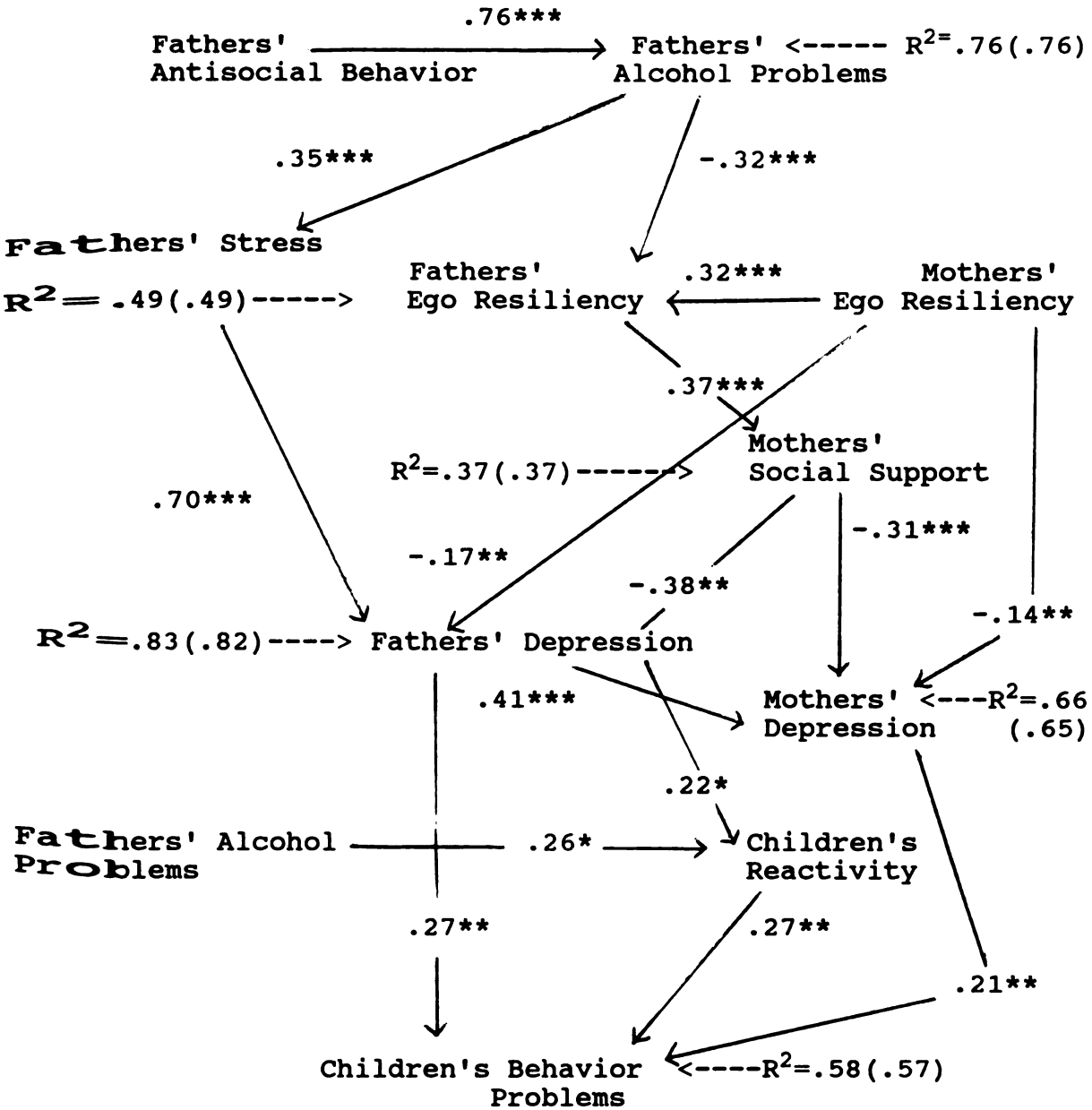

Figure 3

Path Model of Alcoholic Fathers' Variables Predicting Mothers' Ratings of Children's Behavior Problems

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Path coefficient = beta weight
* p<.05, ** p<.01, *** p<.001
Variance information: (Adjusted R^2) in parentheses.
Overall Chi Square=24.8, df=26; n.s.

constructs.

Severe alcoholic fathers had less ego resiliency and more stressful events. Maternal ego resiliency was positively related to father's ego resiliency and father's ego resiliency was positively linked with maternal social support. The maternal social support decreased current depression for fathers and mothers. Mothers' ego resiliency contributed slightly but significantly to fathers' and mothers' current depression. Alcoholics' current depression increased their spouses' current depression.

Both parents' current depression contributed significantly to level of child's adaptive functioning. Alcoholic fathers' current depression contributed to children' behavior problems directly and indirectly through mother's depression and parents' perception of Reactivity. Fathers with high level of alcohol problems perceived their children as more reactive. The effect of this causal relation was not large (.26, $p<.05$), but it was the only relationship that showed a specific contribution of alcoholic fathers' alcohol problems to children's behavior. Overall, the model significantly fit the data (Chi Square=24.81, df=26, ns).

Model 3: Alcoholics' Wives

The third model was designed to test how alcoholics' spouses influenced children's adaptive behavior (Figure 4). Results (Appendix B, Table 24) indicated that there was a strong correlation between spouses' Alcohol Problem and

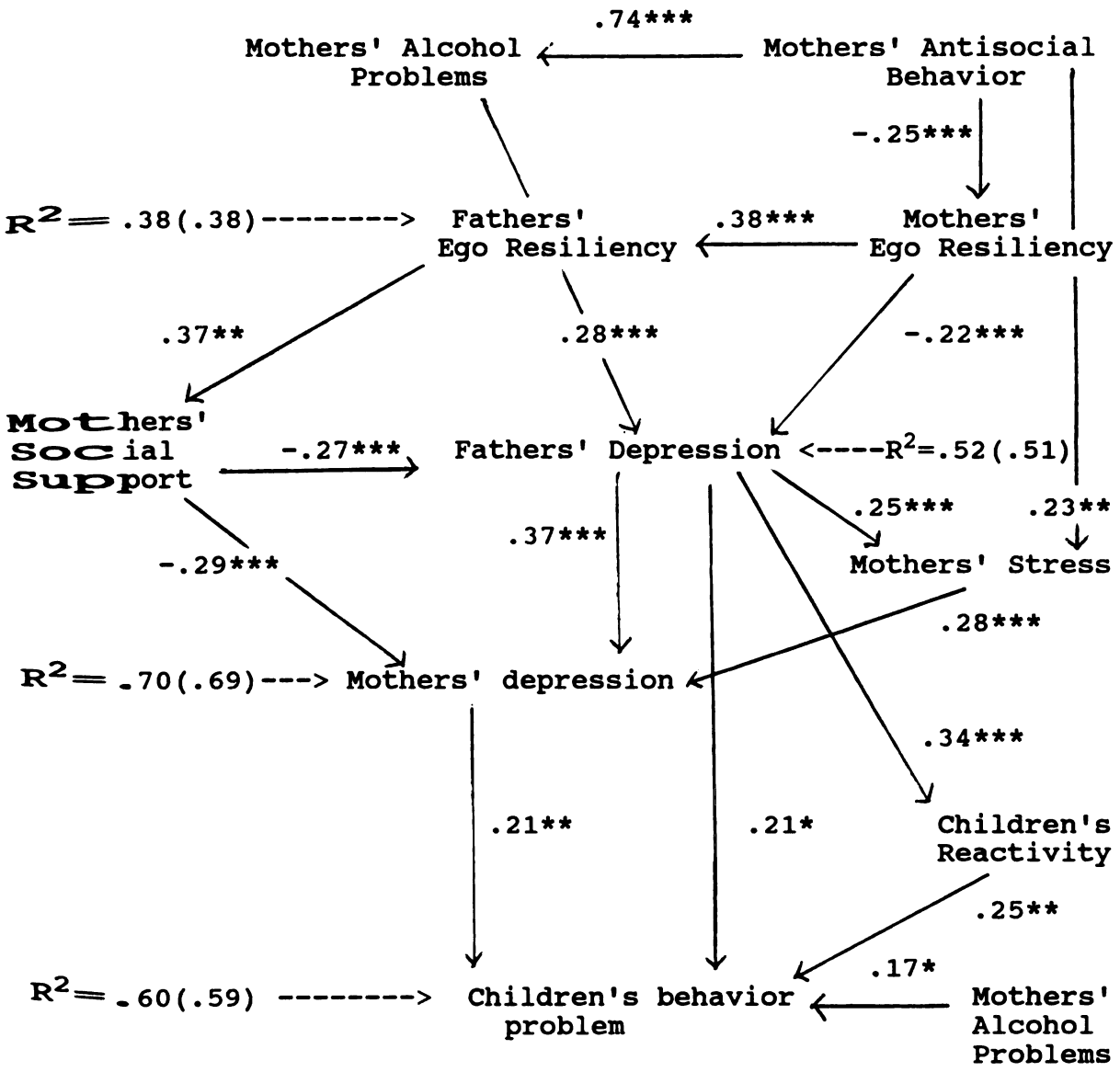

Figure 4

Path Model of Alcoholics' Wives' Variables Predicting Mothers' Ratings of Children's Behavior Problems

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Path coefficient = beta weight
* p<.05, ** p<.01, *** p<.001
Variance information: (Adjusted R^2) in parentheses.
Overall Chi Square=11.72, df=22; n.s.

Antisocial Activity (reproduced correlation is .74), but comparison of correlations between Alcohol Problems, Antisocial Behavior, and parental variables did not show a similar pattern of correlations among parental variables and children's behavior problems (Table 12). In other words, although there was considerable overlap between Alcohol Problems and Antisocial Activity, the two variables for alcoholics' spouses were not the same construct. Alcoholic spouses' Antisocial Behavior was generally correlated with parental variables whereas their Alcohol Problems were correlated with few variables like alcoholic fathers' current depression and mothers' ratings of children behavior problems. However, there was a similar pattern in correlations between paternal Alcohol Problems, Antisocial Behavior and paternal variables.

Alcoholics' spouses with high level of antisocial behavior had more drinking problems. Spouses's alcohol problems increased directly alcoholics' current depression and their children's behavior problems. Spouses with high level of antisocial behavior had less ego resiliency and reported more stressful events in their environment. The causal relationships among alcoholic fathers' and their wives' ego resilient personality, social support, and current depression were observed in the same way that the second model showed. Also the causal relationships among alcoholic fathers' and their wives' current depression, children's Reactivity and children' behavior problems

appeared in the same direction that the second model displayed, except the addition of spouses' alcoholic problems that directly influenced the level of child's adaptive functioning (Fitzgerald, Ham, Zucker, Bruckel, Schneider, & Noll, in press) and alcoholic fathers' current depression.

Another difference between the second model and the third model was that alcoholic fathers' current depression increased their spouses' current depression directly and indirectly through spouses' stress. Mothers' stress contributed significantly to their current depression. Overall, the model significantly fit to the data (Chi Square=11.72, df=22, ns).

In conclusion, the path analyses supported that the parents' antisocial behavior predicted their alcohol problems. Severe alcoholic fathers had low ego resiliency and high stress whereas severe antisocial mothers had low ego resiliency and high stress. The path analyses indicated that not only mothers' ego resiliency but also fathers' ego resiliency were related to mothers' social support, which in turn decreased their depression. Alcoholic fathers' depression influenced their wives' depression directly and indirectly. There was support the hypothesis that parents' stress predicted their depression; there was a particularly strong relationship between alcoholic fathers' stress and their depression. Finally, parents' alcohol problems influenced children's behavior problems: mothers' alcohol

problems had a direct effect on children's behavior, whereas fathers' alcohol problems had an indirect effect on children's behavior through their reactivity.

DISCUSSION

The alcoholic family environment is typically characterized as presenting a negative social environment that includes conflict, disorganization, violence, and poverty (Moos & Moos, 1984; Werner, 1986; Clair & Genest, 1987; Zucker, Weil, Baxter, & Noll, 1984; Leonard & Jacob, 1988; Russell, 1990) as well as a negative genetic environment including parental antisocial behavior and criminality (Cloninger, Bohman, & Sigvardssons, 1981; Cadoret, Cain, & Grove, 1980; Frances, Timm, & Bucky, 1980; Knop, Teasdale, Schulsinger, & Goodwin, 1985). The degree of dysfunction in the alcoholic family environment is positively associated with the level of alcoholics' psychopathology including alcoholism, antisocial behavior, other psychiatric disorders (Penick, Powell, Othmer, Bingham, Rice, & Liese, 1984), and the level of alcoholics' spouses' psychosocial functioning (Moos & Moos, 1984; Jacob & Leonard, 1986). These variables are considered to be major risks that are likely to increase vulnerability for psychopathology and substance abuse in children of alcoholics.

The present study assumed that level of parents' impaired psychosocial functioning would predict the level of

COAs' maladaptive functioning. It was expected that parental alcoholism, antisocial behavior, and/or depression would operate as risks that are directly related to level of COAs' behavior problems, whereas social support, stress, and low SES might be secondary variables that moderate the effect of risks on COAs' behavior. The present study used two strategies of analysis, multiple regression analysis and path analysis, in order to discern early precursors of COAs' psychopathology. This study was designed to assess how variables within the alcoholic environment serve as risk or protective mechanism in relation to children's adaptive functioning early in development.

Parents in Alcoholic Families

Alcoholic families constitute the highest risk groups for development of alcoholism and/or antisocial personality (McCord, 1988; Robins, 1978; Zucker & Gomberg, 1986). Thus, one should be able to identify more risks within the alcoholic family environment than within the nonalcoholic family environment (Zucker, 1989). The present study assumed that parents in alcoholic families have negative characteristics that are related to more negative environments for their children. Parents in alcoholic families often have coexisting psychiatric disorders, such as antisocial personality and depression that result in difficult social consequences including intrafamilial dysfunction. Families in which both parents show psychopathological symptoms should be more dysfunctional

than families in which one parent shows such problems (Moos & Moos, 1984).

Parents in alcoholic families had more Lifetime Alcohol Problems and Antisocial Behavior than did parents in comparison families (c.f., Fitzgerald, Sullivan, Ham, Zucker, Bruckel, Schneider, & Noll, in press). Furthermore, alcoholic fathers had lower Ego Resiliency or the absence of Ego Resiliency with Ego Undercontrolling characteristics, and reported more Current Stress and Depression than did nonalcoholic fathers. Considering the criteria for selection of alcoholic families for the MSU Longitudinal Study, these findings seemed to support the hypothesis that alcoholic fathers have more negative characteristics associated with high risk level of their families than nonalcoholic fathers in comparison families. The high Lifetime Alcohol Problems and Antisocial Behavior of alcoholics' wives may reflect the effects of "assortative mating" (c.f., Russell, 1990). Dual parents alcohol problems and antisocial behavior are likely to increase risk for COAs because they may inherit a predisposition toward alcoholism from each parent and the alcohologenic nature of the rearing environment may be increased (Russell, 1990).

The fact that parenting was not correlated with parental ratings of children's behavior problems was surprising. Parents sorted statements describing their parenting in a Q-Sort format on the Block Child-Rearing Practices Report (CRPR) (Block, 1980). The CRPR, derived

from empirical observations of mothers interacting with their children in structured experimental situations measured parents' child-rearing attitudes, values, and practices. Susman, Trickett, Iannotti, Hellenbeck, and Zahn-Waxler (1985) suggest that the CRPR covers four domains of socialization: expression and regulation of emotions in parent-child interaction, parental discipline and control strategies of child's impulses and desires, parental goals and values for their children's achievement and development of their children's autonomy and independence.

Davies, Zucker, Noll, and Fitzgerald (1991), using 126 alcoholic families participating in the MSU Longitudinal Study, used principal component extraction and found for mothers positive vs. negative affective and authoritarianism vs. child-centeredness parenting, and for fathers nurturance vs. disengaged affective and authoritarianism vs. liberal parenting. The analysis of the current study failed to provide support for the hypothesis that high level of negative affective and/or authoritarian patenting likely increased the level of COAs' behavior problems.

There are several possible explanations for the failure to find a relationship between parenting and child behavior problem. First, two factors of parenting, negative affective and authoritarian parenting (Davies, et al., 1991), are found not to be significantly associated with parental variables; only alcoholic fathers' positive affective parenting was significantly correlated with

fathers' Lifetime Alcohol Problems, Current Depression, Stress, and Ego Resiliency (See Table 18). Mothers' Antisocial Behavior was correlated with their authoritarian parenting and their Current Depression was correlated with their positive affective parenting in alcoholic families. However, most of these correlations were of low order, and only alcoholic fathers' positive affective parenting was associated with children's behavior problems. If parents' psychopathology is causally related to their negative parenting, which in turn is causally linked to their children's behavior problems, these results are inevitable. Since the first link in the causal relationships among variables, that parents' psychopathology is related to their negative parenting, is missing, the second link should be not found.

The second possible explanation is that the CRPR that measured parents' child-rearing attitudes and values is not a sensitive measure of real interactions between parent and child. It is possible that measurement of parental attitudes and values (Susman, et al., 1985) in alcoholic families with young preschool-aged children does not reflect their behavior in the context within interactions with children occur. Only positive affective parenting of mothers in comparison families and fathers in alcoholic families was significantly correlated with their children's behavior problems. When alcoholic fathers' positive affective parenting entered into path analysis, the path

coefficient of this variable was zero. Thus, the parenting variable was dropped from analyses of this study. A third explanation is that there is no consistent parenting in the alcoholic family. COAs have been found to be physically and/or emotionally neglected by their parents (Werner, 1986; Rydelius, 1984). It is possible that young children might easily be neglected by their parents who are preoccupied with their personal and/or social difficulties. Finally, parents in young alcoholic families may not know how to play a role as parent; they may not be able to describe their parenting behavior on such a standardized instrument as the CRPR.

Children in Alcoholic Families

In contrast to the results of parental characteristics, which generally corresponded with other findings in the literature, comparisons between COAs and nonCOAs were not striking. Children in comparison families showed slightly higher but significant developmental status on several areas, such as Fine Motor, Adaptability, Language, and Personal/Social. There were high correlations among children's developmental status in these areas regardless of their families' alcohol status.

Children in comparison families were evaluated as more Ego Resilient than were COAs. Block and Block (1979) found that children with high scores on Ego Resiliency at age 3 were able to recoup after stress, were verbally fluent, less anxious, less likely to externalize, or to withdraw under

stress at age 4. However, the strength of the effects on Ego Resiliency at age 3 were reduced at age 7 when social and cognitive functioning of children were considered. Children who were ego resilient at age 3 were described as task oriented and autonomous, and independent at age 4, whereas less resilient children were seen as critical and devaluing of both self and others. Block and Block concluded that positive patterns of social interaction were associated with children's early Ego Resiliency whereas negative interpersonal behaviors were associated with children's early Undercontrol. The current study found that children in comparison families were more ego resilient than were COAs [$t(158)=2.39$, $p<.01$], and COAs falling in the "clinical range" were seen as less ego resilient than were COAs falling in the "nonclinical range" [$t(119)=1.71$, $p<.05$]. In either case children's Ego Undercontrol did not discriminate children in different groups of families. This finding suggested in general that COAs might begin to have difficulty in areas related to social competence, as early as the preschool years, moreover, these effects may be even stronger for COAs in the "clinical range."

However, there was no difference in parental reports of behavior problems related to psychopathology between COAs and children in comparison families. Similar results were obtained in studies of Jacob and Leonard (1986) and Fitzgerald et al. (in press) using the same instrument as used in this study, the Achenbach Child Behavior Checklist

(CBCL) (Achenbach & Edelbrock, 1983) on different age groups of children. One possible explanation for these results is that alcoholic fathers in the three studies, including the current study, were selected from nonpatient populations, thus, the level of psychopathology might not be as severe as that in studies using clinical samples (Russell, 1990; West & Prinz, 1987). If the level of functioning in the alcoholic families of the three studies is not severely disturbed, then one might expect relatively low levels of children's psychopathology. If so, this would help to explain why no significant correlations between children's behavior problems, Ego Resiliency, Ego Undercontrol, and developmental status in alcoholic families were found. It suggests that in general, children in alcoholic families function similarly to children in comparison families, although, children in comparison families did show better developmental status.

On the other hand, it is difficult to accept that all preschool-aged COAs in the current study are free from psychopathological symptoms, and that they suddenly have behavior problems during childhood. Maybe most preschool-age COAs are not severe now, but some COAs should be at greater risk than others due to their severely dysfunctional families (Jacob & Leonard, 1986). There are two assumptions underlying functioning of the alcoholic families to guide this study. First, there is considerable variability of dysfunction in alcoholic families, and this variability

likely accounts for the observed variability in psychopathology of children of alcoholics (West & Prinz, 1987). Second, the level of psychosocial functioning of alcoholics and their spouses is positively related to the degree of disrupted family functioning and the level of their offsprings' adaptive behavior (Moos & Moos, 1984; Seilhamer & Jacob, 1990). It is reasonable to assume that the dysfunction in alcoholic families disperses on a continuum ranging from the most severely disturbed to the least severely disturbed. It is likely that the most severely disturbed alcoholic families have children with low levels of adaptive functioning and high levels of psychopathology.

Applying the criterion that Achenbach and Edelbrock (1983) used to discriminate between children who were most like their referred and nonreferred sample, Jacob and Leonard (1986) found that families of severely impaired COAs falling in the "clinical range" were described as more dysfunctional including parents' social and personal difficulties. The present study used a cutoff score similar to that used by Jacob et al. for Total Behavior Problems. One-third of COAs in the current study fell in this "clinical range," confirming the findings reported by Reider (1991) for children from the same longitudinal data base.

Analysis of the family environment for "clinical range" COAs showed that their mothers had more negative characteristics than mothers of COAs falling in the

"nonclinical range", as indicated by measures of Lifetime Alcohol Problems, Antisocial Behavior, Ego Resiliency, Current Stress, and Depression. However, alcoholic fathers of children in the "clinical range" only scored higher in Lifetime Alcohol Problems and Current Depression than alcoholic fathers of children in the "nonclinical range." Jacob and Leonard (1986) found that the alcoholic families showed more alcohol-related difficulties, alcoholic fathers showed higher depression, and fathers and mothers had higher scores on the MMPI than alcoholic families who did not report severely impaired children.

If it is true that alcoholics' spouses mediate the detrimental effects of alcoholism on their children (c.f., Fisher, Kokes, Cole, Perkins, & Wynje, 1987), mothers of children in the "clinical range" might not be providing the mediational buffering effect. Indeed, they may actually potentiate the negative effects of alcoholic father, thereby exacerbating the level of risk in the alcoholic families (c.f., Rutter, 1983, 1987; Sameroff & Seifer, 1983, 1987; Masten & Garmezy, 1985; Sroufe, 1983)

Predictors of COAs' Psychopathology

The above results reinforce the general finding that alcoholic parents provide poor nurturing environments for their children. Many studies examining the familial transmission of alcoholism focused on the causal relation between parental alcoholism and children's psychopathology. However, the conflicted findings from previous studies

suggest that alcoholics are a heterogenous group that should be classified into different subtypes according to their coexisting psychiatric symptoms, in as much as different alcoholic subtypes have different family history, levels of education and employment, social difficulties, and marital relationships (Penick, Powell, Othmer, Bingham, Rice, & Liese, 1984). Heterogeneity among alcoholic families is likely to be associated with varying kinds and degrees of psychopathology and related social difficulties, including varying levels of psychopathology among spouses (Moos & Moos, 1984; Seilhamer & Jacob, 1990).

In the present study measurement of COAs' psychopathology relied on the Achenbach Child Behavior Checklist (CBCL). This instrument is a standardized instrument that provides sex and age norms, and is designed to identify problem behaviors (Achenbach & Edelbrock, 1983). In addition, the CBCL assesses children's social competence, but since few subjects in the current study were enrolled in school, this part of the CBCL was not used. During wave 2 of the current study when all children will be in school, social competence can be assessed. It is expected that social competence will associated with more positive features that contribute to resilient characteristics (Garmezy, 1981; Werner & Smith, 1982, Masten & Garmezy, 1985; Sroufe, 1983).

Orders of entry of independent variables for regression analysis (Table 11) were determined theoretically. Parents'

Lifetime Alcohol Problem, Antisocial Behavior, and Ego Resiliency were expected to reflect personality and behavioral characteristics established over the lifetime. Even though the California Adult Q-Sort does not demarcate present and past behaviors, it is assumed that personality reflects cumulative lifetime experiences rather than current experiences. On the other hand Social Support, Current Stress, and Depression are assumed to reflect current states. In the theoretical model it was assumed that parents' lifetime difficulties increased their current difficulties.

Only one child characteristic, temperament, was used as the independent variable. It is possible that the relationships between children's temperament and their behavior problems can be attributed partially to parents' ratings. However, the observed correlations among these variables were not large enough to suspect this kind of question, and did not show any consistent pattern of parental ratings on both scales.

For multiple regression analysis, four dependent variables were used for comparison; mothers' ratings of Total Behavior Problems (TBP), Externalizing Behavior, and Aggressive Behavior, and fathers' ratings of TBP. All the multiple regression analyses were significant, but there were few variables that remained as significant after all the independent variables entered in each equation. Two variables predicted independently children's behavior

problems; mothers' perception of Attention Span/Distractibility predicted their ratings of children's Aggressive Behavior, whereas alcoholic fathers' Current Depression predicted their ratings of children's TBP. Children who were perceived by their mothers to have high Attention Span were rated as less aggressive. Children's Attention Span/Distractibility may be a reliable predictor of COAs' behavior problems, especially related to either hyperactivity or conduct disorder (Windle, 1990; West & Prinz, 1987), since it is a single variable which shows low but significant positive correlation with children's Ego Resiliency and negative correlation with children's Ego Undercontrol. Other studies have showed that children of alcoholics have adjustment problems due to their lack of concentration (Rydelius, 1984) and impulsivity (Knop, Teasdale, Schulsinger, & Goodwin, 1985) and tend to have poor achievement at school. In addition, in the present study maternal ratings of Aggression were weakly but significantly associated with children's Ego Undercontrol. In comparison families a similar but stronger relation between the two variables was observed.

Demographic variables are believed to be related to parental psychopathology. Particularly, low SES is frequently found in alcoholic families (Russell, 1990). In the current study correlations between parental variables and demographic variables were not very impressive except Years of Marriage. Multiple regression analyses suggested

that demographic variables such as family SES, parents' Age and Eduction, and Years of Marriage did not contribute to children's different behavior problems in the same way. Some of the variance for mothers' ratings of children's TBP and Externalizing Behavior was accounted for by Years of Marriage but not by family SES and parents' Age and Education. But all demographic variables contributed to maternal ratings of children's Aggression. In addition, mothers' education and maternal ratings of Attention Span independently predicted children's Aggression.

The observed correlations among variables are not high enough to indicate serious problems with multicollinearity. Since the independent variables are unlikely to be totally uncorrelated (Shcroeder, Sjoquist, & Stephan, 1987), one possible solution for multicollinearity is to combine the related variables into one variable (Lewis-Beck, 1986). Thus, the variables that were theoretically related and highly correlated were combined. Lifetime Alcohol Problem and Antisocial Activity were combined and labeled Lifetime Difficulty. Current Stress and Depression were combined and labeled Current Difficulty. Combining variables had little effect on the regression equations. The variance explained by children's TBP, Externalizing Behavior, and Aggression was similar to that explained by the original independent variables. Children's Reactivity predicted children's Externalizing behavior and children's Attention Span/ Distractibility predicted their Aggression. Fathers'

Current Difficulty predicted their ratings of children's TBP.

It was found that parents' perception of children's Reactivity was significantly related to alcoholic fathers' Current Depression; alcoholic fathers with high levels of Current Depression perceived their children as more reactive. This finding suggests that parents' emotional state influenced their ratings of children's actual behavior (Shaughency & Lahey, 1985). The present study found a weak relation between mothers' Current Depression and their rating of children's Reactivity and a strong relationship between parents' Current Depression and their ratings of children's TBP. Schaughency and Lahey (1985) reported a relationship between maternal depression and maternal perception of children's externalizing behavior problems, but they also found that maternal ratings and teachers' ratings of children's behavior were strongly correlated.

Parental perception of children's temperament is believed to influence parent-child interactions (Belsky, 1984; Rutter, 1984, 1987; Tarter, Alterman, & Edwards, 1985; Werner, 1986; Werner & Smith, 1982). Werner (1986) found that more of the resilient COAs who did not develop serious mental and coping problems by age 18 had received a great deal of attention from their caretakers during the first year of life and were perceived as "cuddly and affectionate." Children with difficult temperament were more likely than other children to be the target of parental

hostility, criticism, and irritability (Rutter, 1987). Temperamentally difficult children were found to be less adaptable to change and more vulnerable to adversity than were temperamentally easy children (Hetherington, 1989). In a longitudinal study of the effects of divorce on children's adjustment, Hetherington compared parents' retrospective report of children's temperament and temperament ratings made by nurses during the first 2 years of life with later children's behavior. The nurses' ratings of infant temperament predicted later children's behavior better than mothers' reports of infant temperament did, whereas the mothers' reports of infant temperament predicted their own later behavior toward their children, and their report was weakly but significantly correlated with later children's behavior. Hetherington studied the role of children's temperament on their adjustment to their parents' divorce. The results seemed to generally support Rutter's (1987) claim that temperamentally difficult children were more likely to be both the elicitor and the target of parents' criticism. However, Hetherington found effects of maternal variables on interactions between children with difficult temperament and maternal personality and stress. Unless temperamental difficulty was compounded by such maternal variables, there were no differences in mothers' negative responses to their children's temperamental difficulty, compared with children having easy temperament. These findings suggest that temperament of children in alcoholic

families has the potential to significantly influence the quality of parent-child interaction.

A series of multiple regression analyses were conducted for only parents' psychopathological problems such as Lifetime Alcohol Problem, Antisocial Behavior, and Current Depression. The amount of variance accounting for children's behavior problems appeared to decrease, suggesting that variables such as maternal Social Support, parents' Current Stress and Ego Resiliency contributed significantly to children's Externalizing Behavior and Aggression. However, there was not much difference in the amount of variance accounted for by mothers' ratings of children's TBP when entering all the variables and when entering only parents' psychopathological problems. This result suggested that parents' psychopathology was more related to children's TBP. Parents' Current Depression was a significant predictor of children's behavior problems. Alcoholic fathers' and their spouses' Current Depression predicted children's TBP. Alcoholics' spouses' Current Depression predicted children's Externalizing behavior whereas Alcoholics' Current Depression predicted children's TBP of fathers' rating. This finding indicated that parents' current depression was a strong predictor of children's behavior problems. One possible explanation for this relationship (Rutter, 1990) is that parents' current depression is more likely to be involved in adverse interactions with other family members (Colletta, 1983; Moos

& Moos, 1984; Phares & Compas, 1992). Families in which alcoholic fathers had more drinking problems and complained of more depression and physical symptoms reported more family arguments, less cohesion and expressiveness, and showed less agreement about their family environment between spouses (Moos & Moos, 1984). Jacob and Leonard (1986) found that alcoholic fathers of children falling in the "clinical range" reported higher depression than did alcoholic fathers of children in the "nonclinical range." T-test results of the present study indicated that alcoholic fathers showed higher depression than did fathers in comparison families and alcoholic fathers and their wives in alcoholic families of children in the "clinical range" reported higher depression than those in alcoholic families of children in the "nonclinical range."

Again only the combined variables Lifetime Difficulty and Current Difficulty entered for multiple regression analysis. All the regression analysis were significant. The amount of variance for children' behavior problems decreased. Mothers' Lifetime Difficulty predicted children's TBP, Externalizing Behavior, and Aggression. This finding seemed interesting because alcoholics' spouses had more Lifetime Alcohol Problem and Antisocial Behavior than did nonalcoholic' spouses, but there were no differences in other parental variables between the two groups of spouses. This result indicated the effect of alcoholics' spouses' psychopathology on children's adaptive

functioning. Alcoholic fathers' Lifetime and Current Difficulty predicted their ratings of children's TBP.

Davies, Zucker, Noll, and Fitzgerald (1989) found that the characteristics of the father-child relationship were independent of the mothers' psychological functioning, using the sample of the MSU Longitudinal Study. Inspection of a correlation matrix from the present study actually suggests similar conclusions; alcoholic fathers' psychosocial functioning was correlated with both mothers' ratings and fathers' ratings of children's behavior problems, but maternal psychosocial functioning was not significantly associated with fathers' ratings of children's behavior problems. This finding suggests that alcoholic fathers' psychosocial variables are likely to influence their marital relationship, which, in turn, influences mother-child interactions. Path analysis showed direct and indirect effects of alcoholic fathers on children's behavior.

Path Model of Alcoholic Families

Three path models derived from a theoretical model were examined. The first path model tested how parental variables, alcoholics' and alcoholics' wives combined, lead to children's behavior problems. There are several reasons why parental variables should be combined. The results of multiple regression analysis did not find specific contribution of parents' psychopathology to children' behavior problems except parents' depression, suggesting some problems with multicollinearity. To improve this

problem parental variables that were theoretically related and strongly correlated, were combined into a single variables. Using the combined variables with other parental variables in multiple regression analysis did not provide better results. Especially there were fairly strong associations between alcoholics' and their spouses' Lifetime Alcohol Problem and Antisocial Behavior. However, whether alcoholics' psychopathology influenced their spouses' problems or alcoholics' spouses' psychopathology influenced alcoholics' problems can not be determined. Nor can it be determined whether women with alcohol problems have a tendency to marry alcoholics (c.f., Russell, 1990). However, the first model using combined parental variables was not contaminated by the issue of direction of effects. The problem with the first model was that it did not provide a way to test how alcoholic' and spousal variables interact within the alcoholic family environment. The second and third path models dealt with this problem, that is, these models assessed how alcoholic' and spousal variables causally influenced their children's behavior problems.

Parents' Alcohol Problems and Antisocial Behavior reflect their impaired psychosocial functioning (Penick, Powell, Othmer, Bingham, Rice, & Liese, 1984; Hesselbrock, Hesselbrock, Babor, Stabenau, Meyer, & Weidenman, 1984; Reider, Zucker, Noll, Maguin, & Fitzgerald, 1986). Alcoholic parents tended to be less well educated, have low level occupations, difficulty with interpersonal

relationships including marital relationship, and trouble with the law (Penick, et al., 1984; Werner, 1986; McCord, 1988). Thus, it was almost inevitable that parents with a high level of alcohol problems and antisocial behavior reported high levels of stress in their social environment.

It is likely that parents with a long history of alcohol problems and antisocial behavior have dysfunctional personality (Zucker & Gomberg, 1986; Rutter & Giller, 1983). Block's two constructs of personality (Block & Block, 1979), Ego Resiliency and Ego Undercontrol, did not deal with abnormal personality in clinical setting. However, the two constructs seem to show a general level of a person's adaptive ability within a social context. The ego undercontroller is expected to have a low level of threshold for response, to manifest desires and impulses directly into behavior, to want the immediate gratification of desires, and to be easily distracted. The ego resilient person is expected to accommodate well to the environment, to have coping or problem solving ability, and to recover well under and after stress. The description of the ego undercontroller seems to fit well the image of an alcoholic. Block, Block, and Keyes (1988) found in their longitudinal study that the presence of ego undercontrol and the absence of ego resiliency were likely to be positively related to adolescents' drug use.

In the present study, observers rated alcoholic fathers to be more ego undercontrolled and less ego resilient.

However, since parents' ego undercontrol was not significantly correlated with other parental variables and child variables, only parents' ego resiliency was included in the analysis. Parents with a high level of lifetime alcohol problem and antisocial behavior were associated with low level of ego resiliency. According to Block and Block's (1979) definition of Ego Resiliency, an ego resilient person is seen to be an adaptable and functional individual within the social context. In the current study low levels of ego resiliency is assumed to reflect low levels of adaptive functioning, rather than their specific maladaptive behaviors. Personality is considered to be a general psychological resource that people draw upon to help them withstand stress in their environment (Pearlin & Schooler, 1978). Parents' high lifetime alcohol problem and antisocial behavior are expected to show defects in such a general psychological resource, that is likely to serve as a risk mechanism for children's development in the alcoholic family environment.

Parents' personality is believed to influence both the marital relationship and parenting behavior (Belsky, 1984). Alcoholics and their spouses who used avoidance coping were more associated with family arguments and the extent of disagreement on joint tasks, whereas alcoholics' spouses who used active coping strategies agreed more closely with their husbands on the joint tasks (Moos & Moos, 1984). The presence of marital support influenced parenting behavior of

women of high risk group, who were reared in institutions, indicating protective processes associated with marital support (Rutter, 1987). The presence of social support suggests that there should be at least one significant intimate relationship with another person (Crockenberg, 1988; Sullivan, Maguin, Fitzgerald, Zucker, & Noll, 1990). Sullivan et al. (1990), using alcoholic families participating in the MSU Study, found that alcoholics' spouses felt less liked and loved by their partner and felt that they could less depend on their husbands in a crisis than did spouses in comparison families. The current study, combined emotional and instrumental aids of spouses and other family members, did not find any significant difference in social support between spouses in alcoholic families and in comparison families.

It infers that families in which alcoholics' wives receive emotional and instrumental support from their husbands will have less marital conflict. The social support for mothers is strongly related to her psychological well-being, which in turn is associated with her behaviors directed toward children (Belsky, 1984; Colleta, 1981; Powell, 1981). The results of the present study indicated that alcoholics' spouses' social support decreased their current depression and their husbands' current depression. Since alcoholics' spouses' social support is especially associated with their husbands' support, it is likely that low levels of parental depression results from their

supportive marital relationship.

Support in marital relationship decreased parents' current depression whereas parents' stress increased their current depression. Depression is one of the most frequent co-morbid symptoms that alcoholics have reported (Russell, Henderson, & Blume, 1984; Penick, Othmer, Bingham, Rice, & Liese, 1984). Forty-eight percent of a sample of antisocial alcoholics were positive for depression and/or mania in Penick et al's study. Moos and Moos (1984) found that alcoholic families in which both spouses complained of depression and physical symptoms had more arguments and less cohesion than those in which only one spouse had such complaints.

The question is why parents' depression is related to children's behavior problems. The present study hypothesized that parents' depression increased parents' negative affective and authoritarian parenting, which in turn increased children' maladjustment. But since the results of the study did not find any causal relationship between parenting and children's behavior problems. Thus there is no such causal link in the path model. The results of another study (Susman, Trickett, Iannotti, Hollenbeck, & Zahn-Waxler, 1985) indicated that depressed mothers expressed inconsistency in discipline and hostility in rearing situation. Longfellow and Belle (1984) explained that depressed mothers were less responsive, less nurturing, and more punitive to their young children. It is hardly

expected that depressed mothers serve as a buffering system for children to reduce the impact of stress in environment.

Children's temperament influenced children's adaptive functioning. Parents' current depression was associated with their perception of children's Reactivity, but also alcoholic fathers' lifetime alcohol problems were related to children's Reactivity. Parents' depression, especially fathers' depression, might influence their perception of children's temperament, but parent's perception of Reactivity showed some congruence with an observer's rating of children's behavior, Ego Undercontrol.

Path Models of Alcoholics and Their Wives

The second model of alcoholics and the third model of alcoholics' spouses are discussed together. Parents' antisocial behavior predicted parents' alcohol problems (Zucker & Gomberg, 1986; McCord, 1988). The high correlation between the Lifetime Alcohol Problem and Antisocial Behavior suggested that the two instruments measured the same constructs. However, even though there was considerable overlap between two variables (c.f., Robins, 1978), they were believed to be different constructs, since there were alcoholic probands without antisocial characteristics (Penick, Powell, Othmer, Bingham, Rice, & Liese, 1984) and probands with antisocial personality without alcoholism (Hesselbrock, Hesselbrock, Babor, Stabenau, Meyer, & Weidenman, 1984). There were two findings to support that antisocial behavior and alcohol

problems were highly associated but different constructs in the current study. Antisocial alcoholics had different sociodemographic background, family history of psychiatric disorder, and drinking history, compared with other alcoholic subtypes (Hesselbrock, Hesselbrock, Babor, Stabenau, Meyer, & Weidenman, 1984; Penick Powell, Othmer, Bingham, Rice, & Liese, 1984). Parents' antisocial behavior was significantly correlated with most demographic variables, whereas their lifetime alcoholic problems was not. Parents' antisocial behavior was associated with low family SES, low parents' education, and younger age. Path analyses showed that alcoholics' Lifetime Alcohol Problems and their spouses' Antisocial Behavior - not their Lifetime Alcohol Problems - operated in a similar way in the model. Alcoholics' alcohol abuse and related difficulties predicted low Ego Resiliency and high stress, whereas their spouses' antisocial characteristics predicted low Ego Resiliency and high stress.

It should be noted that more mothers of COAs in the "clinical range" showed an absence of Ego Resiliency compared with mothers of COAs in the "nonclinical range," whereas there was no difference in Ego Resiliency between alcoholic fathers of COAs in the "clinical range" and COAs in the "nonclinical range." Alcoholics' spouses with ego resilient characteristics obtained more support in their marital relationship and their relationship with other family members. Alcoholics' spouses' ego resilient

characteristics predicted weakly but significantly low level of their husbands' current depression, indicating the importance of alcoholics' spouses' adaptive ability in the alcoholic family environment. The influence of alcoholics' wives' adaptive functioning on alcoholics' behavior including their support and depression, contrasts with the effect of alcoholics' depression on their wives' depression. These findings indicate that there are bidirectional interactions between alcoholics and their wives in the alcoholic family environment. Mothers' social support decreased their current depression (Colletta, 1981). Mothers' social support was negatively associated with alcoholic fathers' current depression, but spouses' social support did not have a direct effect on their alcoholic husbands' depression. Alcoholic families in which spouses obtained their husbands' support probably have less family discord and marital conflict. Alcoholics in families that reported less marital conflict might be less depressed than alcoholics in families experiencing conflict among family members.

Social support decreased alcoholics' spouses' current depression, whereas their husbands' current depression increased directly and indirectly through spouses' stress and spouses' current depression. Sources of alcoholics' spouses' current depression derive from their social support, stress, and their husbands' depression, however sources of alcoholics' current depression are their stress

and maternal social support. In the second model and the third model there was a considerable difference in the amount of variance accounting for alcoholics' current depression; .82 in the second model including fathers' stress variable, which results from their drinking problems and .51 in the third model without their stress variable, in which alcoholics' spouses' drinking problems influence significantly their husbands' current depression. Thus, spouses' drinking problems do not seem to be a source of stress to alcoholics. However, for alcoholics' spouses there is little difference in variance accounted for spouses' current depression; .65 in the second model without their stress variable and .69 in the third model including their stress. The results suggested that alcoholics' wives' depression was significantly influenced by their husbands' depression, however, alcoholics' depression was associated with their stress. Thus, alcoholics' spouses likely mediate between alcoholics' depression related to their personal and social difficulty and children's adaptive functioning.

Alcoholics' and their spouses' current depression predicted their children's behavior problems as compared with other parental variables. Considering only parental psychopathology, hierarchical multiple regression analysis showed that only parents' depression predicted children's TBP. Path analyses showed that alcoholics' current depression is the most powerful and significant variable to lead to children's behavior problems. Path analysis showed

that alcoholics' current depression resulted from their personal and social difficulties, related to their alcohol abuse. Regarding effects of parental depression on children Rutter (1990) questions whether impaired parenting stems from parental depression, or from other risk factors leading to depression.

As already indicated there is a missing link between parents' depression and children's behavior problems. Only some speculations are possible right now. Alcoholic family environments in which parents report more alcohol problems, antisocial behavior, and depression may be characterized as having more conflict and adverse interactions among family members, and as being less nurturing (Seilhamer & Jacob, 1990; Moos & Moos, 1984). Such variables associated with the negative alcoholic family environment seem to serve as risks in relation to COAs' adaptive functioning. Parents' ego resilient characteristics, stress and maternal social support seem to serve as mediators of other parental variables such as parents' alcohol problems, antisocial behavior, and depression. The maternal social support and parents' ego resiliency are likely to be involved in protective processes with respect to children' adaptation by decreasing levels of parents' current depression, whereas stress is likely to be engaged in exacerbating processes by increasing levels of parents' current depression. Demographic variables such as family SES, parents' age and education, and years of marriage are likely to moderate the

effects of risk in alcoholic families. Children's temperament influences children's adaptive behavior by involving parent-child interactions: COAs' Reactivity and Attention Span/Distractibility are related to their psychopathology.

The findings of the present study showed a complex context of alcoholic family environment in which parental and children variables interact with each other to lead to COAs' psychopathology. Measurement of alcoholic fathers' problems (e.g., alcoholism) does not explain the process of how alcoholic family environment as a system is involved in COAs' adaptive functioning. These results indicate the importance of multimeasurement of alcoholic family environment (Zucker, 1989; Zucker & Noll, 1982; Phares & Compas, 1992) that has multiple risks and of focus on the process of how variables observed within the alcoholic family environment function in relation to children's behavior.

The basic focus of previous alcoholic studies is on why COAs become alcoholics rather than why some COAs do not become alcoholics in adulthood. It is important to understand why and how resilient COAs acquire sufficient competence to resist negative factors in their adverse environments whereas other COAs are victimized by such factors. Many people interested in the etiology of alcoholism realize that study of adaptive COAs can provide important information about normal as well as abnormal

development (West & Prinz, 1987), especially for development of intervention programs for COAs. The present study showed that COAs acquired lower scores on RYDS developmental status and were rated as less ego resilient by an observer than did children in comparison families, whereas COAs falling in the "nonclinical range" were seen as more ego resilient. In future studies it will be interesting to determine whether these children turn out to be resilient COAs or vulnerable COAs, and how variables in the alcoholic family environment influence the processes affecting the child's development.

APPENDIX A

Informed Consent Form

RESEARCH PARTICIPATION INFORMED CONSENT FORM (T-1)

We freely consent to take part in a scientific study of child development and family functioning being conducted by Drs.Robert A.Zucker and Hiram E.Fitzgerald (from the Department of Psychology at Michigan State University) and Dr.Robert B.Noll (from the Children's Hospital Medical Center at the University of Cincinnati).

The study has been explained to us and we understand the explantion that has been give and what our partcipation and what the participation of our child(ren) _____ will involve. We understand that we will be asked to fill out questionnaires, and take part in interviews, and that our child(ren) will do the same. We have been informed that participation in this phase of the project involves taking part in 9 sessions with a time commitment of approximately 11 hours for each adult and approximately 7 hours for our child.

We understand that we are free to discontinue our participation in the study at any time without penalty; we also are aware that our involvement or lack of involvement in the study, or in different subparts of it, will not affect our obtaining treatment that is offered by your staff in any other capacity.

We understand that the results of the study will be treated in strict confidence and that we and our child(ren) _____ will remain anonymous. Within these restrictions, results of the study will be made availabe to us periodically throughout the course of the project and for a minimum of 3 years after the projects has concluded. Also within the restrictions noted above, we understand that general results of the research will appear in professional journals and will be presented at scientific meetings.

We understand that our participation in the study does not guarantee any beneficial results to us or to members of our family.

SIGNATURES

Informed Consent:

Mother	Father

Assent:

Child	Date
Witness	Family code number 4/91

APPENDIX B

Statistical Tables

Table 18

Mean Scores for Parents' Characteristics of COAs in the "Clinical Range" and COAs in the "Nonclinical Range"

	Alcoholic Families (Clinical Range)		Alcoholic Families (Normal Range)				
	M	SD	M	SD	t	df	p
Alcoholic Problems							
Mothers	11.21	2.42	9.79	1.85	-3.52	134	.00
Fathers	11.25	1.91	10.46	1.82	-2.13	134	.05
Antisocial Behavior							
Mothers	15.55	9.56	11.71	6.64	-2.51	129	.01
Fathers	25.75	11.84	22.51	13.30	-1.07	129	ns
Depression							
Mothers	5.16	4.46	2.93	3.19	-3.08	129	.00
Fathers	4.97	4.05	2.62	2.90	-3.55	127	.00
Personality: Ego Resiliency							
Mothers	-.11	.33	.08	.37	2.52	124	.01
Fathers	-.15	.29	-.11	.31	.71	117	ns
Personality: Ego Undercontrol							
Mothers	-.05	.20	-.09	.20	-1.02	124	ns
Fathers	.05	.19	.05	.20	.17	117	ns
Stress							
Mothers	26.31	12.92	20.09	12.67	-2.28	115	.02
Fathers	22.10	15.25	19.35	15.34	-.84	115	ns
Social Support							
Mothers	15.46	2.93	16.10	2.76	1.08	115	ns
Fathers	14.70	4.15	15.86	3.19	1.53	107	ns

Table 19

Mean Scores for Behavior Problems, Temperament, Personality, and General Developmental Status for COAs in the "Clinical Range" and COAs in the "Nonclinical Range"

	Alcoholic Families (Clinical Range)		Alcoholic Families (Normal Range)				
	M	SD	M	SD	t	df	p
CBCL							
Total Behavior Problems							
Mothers	69.42	5.75	53.54	7.19	-11.94	146	.00
Fathers	61.26	9.55	55.01	10.34	-3.17	143	.02
Externalizing Behavior							
Mothers	68.40	6.46	52.85	8.60	-9.86	146	.00
Fathers	61.09	10.50	54.71	10.31	-3.22	143	.00
Internalizing Behavior							
Mothers	64.80	7.44	52.26	6.95	-9.17	146	.00
Fathers	58.31	8.55	53.15	10.03	-2.75	143	.01
Aggression							
Mothers	71.43	8.37	58.14	4.92	-11.63	146	.00
Fathers	64.71	9.98	60.25	7.63	-2.78	143	.01
Temperament							
Rhythmicity							
Mothers	4.32	2.41	5.54	2.01	2.77	122	.01
Fathers	4.94	2.10	5.32	2.12	.88	122	ns

Table 19 (cont'd)

	M	SD	M	SD	t	df	p
Reactivity							
Mothers	3.87	1.46	3.04	1.76	-2.36	122	.02
Fathers	4.13	1.09	3.15	1.43	-3.49	122	.00
Attention Span/Distractibility							
Mothers	3.71	3.06	5.71	2.80	3.37	122	.00
Fathers	4.10	2.99	4.94	2.89	1.39	122	ns
Adaptibility							
Mothers	4.39	1.61	4.09	1.66	-.88	122	ns
Fathers	4.35	1.14	3.89	1.54	-1.53	122	ns
Activity Level							
Mothers	1.71	1.42	1.19	1.42	-1.75	122	.05
Fathers	2.19	1.25	1.55	1.44	-2.23	122	.02
Personality							
ER	.02	.33	.13	.31	1.71	119	.05
EU	.09	.21	.06	.19	-.71	119	ns
RYDS Developmental Status							
GM	48.34	12.89	49.38	12.49	.39	117	ns
FM	50.93	11.59	52.00	10.95	.45	117	ns
AD	51.89	10.55	53.28	9,61	.66	117	ns
LAD	50.11	13.51	52.69	11.00	1.04	117	ns
PS	52.61	11.58	53.64	9.68	.47	117	ns
DQ	51.07	11.14	53.01	9.40	.92	117	ns

Note. ER=Ego Resiliency. EU=Ego Undercontrol. GM=Gross Motor Development. FM=Fine Motor Development. AD=Adaptibility. LAN=Language Development. PS=Personal/Social Development. DQ=Overall Development Quotient.

Table 20

Correlations between Parental Variables and Positive Affective and Authoritarian Parenting

	Alcoholic Families				Comparison Families			
	Affective		Authoritarian		Affective		Authoritarian	
	M	F	M	F	M	F	M	F
MLAPSR	-.14	.02	.10	-.07	-.01	.05	-.15	.30
MTASB	-.16	-.10	.20*	.06	-.05	-.08	.18	.10
MER	.14	.25**	-.18	-.14	.24	-.11	.02	.19
MSTRESS	.02	-.01	.11	-.05	-.09	.08	-.14	-.03
MTBDI	-.21*	-.20*	.13	.08	-.02	-.21	-.21	-.08
FLAPSR	-.06	-.19*	.04	-.16	-.07	-.06	-.06	.12
FTASB	-.02	-.05	.16	-.07	-.26	.16	.16	-.33
FER	.07	.25**	-.26**	-.00	.02	.22	.22	-.21
FSTRESS	-.04	-.24**	.28**	-.13	-.20	-.2	-.22	.05
FTBDI	-.01	-.36**	.24**	.12	-.08	-.15	-.15	.10
MTBP	-.06	-.22*	.08	.08	-.42*	.23	.23	-.18
MEXT	-.09	-.20*	.06	.06	-.33	.11	.11	-.33
MINT	-.00	-.23*	.15	.11	-.40*	.30	.30	.02
MAGG	-.18	-.21*	.05	.03	.40	.05	.05	-.23
FTBP	-.07	-.14	.03	.03	-.24	-.06	-.06	-.12
FEXT	-.07	-.14	.06	.00	-.24	-.01	-.01	-.08
FINT	-.07	-.13	-.03	.08	-.19	.00	.00	-.04
FAGG	-.07	-.20*	.10	-.03	-.18	-.03	-.03	-.10

* p<.05, ** p<.01. Two-tailed.

Note. M=Mothers. F=Fathers.
MLAPSR=Mothers' Lifetime Alcohol Problems. MTASB=Mothers' Antisocial Behavior. MER=Mothers' Ego Resiliency. MSTRESS=Mothers' Stress. MTBDI=Mothers' Depression. FLAPSR=Fathers' Lifetime Alcohol Problems. FTASB=Fathers' Antisocial Behavior. FER=Fathers' Ego Resiliency. FSTRESS=Fathers' Stress. FTBDI=Fathers' Depression. MTBP=Mothers' Ratings of Total Behavior Problems. MEXT=Mothers' Ratings of Externalizing Behavior. MINT=Mothers' Ratings of Internalizing Behavior. MAGG=Mothers' Ratings of Aggression. FTBP=Fathers' Ratings of Total Behavior Problems. FEXT=Fathers' Ratings of Externalizing Behavior. FINT=Fathers' Ratings of Internalizing Behavior. FAGG=Fathers' Ratings of Aggression.

Table 21

Correlations among Demographic Variables, Parental Variables and Children's Behavior Problems in Alcoholic Families

	FYSES	Mother Age	Father Age	Mother Educat-	Father Educat-	Years Marri-
MLAPSR	-.02	.08	.00	-.06	-.08	-.30**
MTASB	-.32**	-.18*	-.14	-.37**	-.12	-.27**
MER	.33**	.17	.09	.28**	.18*	.22*
MSTRESS	-.06	-.15	-.06	-.01	-.14	-.25*
MTBDI	-.17	-.02	-.13	-.11	-.27**	-.11
SUPPORT	.01	.01	-.01	-.01	-.08	.11
FLAPSR	-.18*	-.03	-.05	-.06	-.06	-.14
FTASB	-.34**	-.29**	-.19*	-.28**	-.19*	-.20*
FER	.18	.13	-.14	.09	.10	.22*
FSTRESS	-.13	-.03	.06	-.17	-.08	.19
FTBDI	-.22*	-.13	-.05	-.26**	-.09	-.31**
MTBP	-.22*	-.18*	-.13	-.14	-.25**	-.31**
MEXT	-.23**	-.18*	-.16	-.10	-.24**	-.27**
MINT	-.25	-.23*	-.12	-.17	-.31	-.37**
MAGG	-.13	-.14	-.15	-.05	-.22**	-.37**
FTBP	-.23**	-.10	-.07	-.09	-.07	-.23*
FEXT	-.24**	-.07	-.07	-.08	-.13	-.19*
FINT	-.21*	-.14	-.11	-.10	-.06	-.24*
FAGG	-.26**	-.11	-.09	-.09	-.12	-.20*

* $p<.05$, ** $p<.01$. Two-tailed.

Note. MLAPSR=Mothers' Lifetime Alcohol Problems. MTASB=Mothers' Antisocial Behavior. MER=Mothers' Ego Resiliency. MSTRESS=Mothers' Stress. MTBDI=Mothers' Depression. FLAPSR=Fathers' Lifetime Alcohol Problems. FTASB=Fathers' Antisocial Behavior. FER=Fathers' Ego Resiliency. FSTRESS=Fathers' Stress. FTBDI=Fathers' Depression. MTBP=Mothers' Ratings of Total Behavior Problems. MEXT=Mothers' Ratings of Externalizing Behavior. MINT=Mothers' Ratings of Internalizing Behavior. MAGG=Mothers' Ratings of Aggression. FTBP=Fathers' Ratings of Total Behavior Problems. FEXT=Fathers' Ratings of Externalizing Behavior. FINT=Fathers' Ratings of Internalizing Behavior. FAGG=Fathers' Ratings of Aggression.

Table 22

Path Analysis of Parental Variables Predicting COAs' Total Behavior Problems

Correlations (Corrected for attenuation)

	1	2	3	4	5	6	7
1) Psychopathology	--						
2) Ego Resiliency	-35	--					
3) Stress	30	-23	--				
4) Social Support	-17	36	-13	--			
5) Depression	45	-36	59	-52	--		
6) Child's Reacti-	21	-25	23	-13	35	--	
7) Child's TBP	26	-20	30	-27	54	42	--

Standard Errors for Path Coefficients[a] and Path Coefficients[b]

	1	2	3	4	5	6	7
1) Psychopathology	--	5[a]	6				
2) Ego Resiliency	-35[b]	--		6			
3) Stress	30		--		6		
4) Social Support		36		--	7		
5) Depression			53	-45	--	9	7
6) Child's Reacti-					35	--	9
7) Child's TBP					45	26	--

Reproduced Correlations

	1	2	3	4	5	6	7
1) Psychopathology	--						
2) Ego Resiliency	-35	--					
3) Stress	30	-23	--				
4) Social Support	-13	36	-8	--			
5) Depression	22	-28	57	-49	--		
6) Child's Reacti-	8	-10	20	-17	35	--	
7) Child's TBP	12	-15	31	-27	54	42	--

Table 22 (cont'd)

Errors: (Actual - Reproduced)

	1	2	3	4	5	6	7
1) Psychopathology	--						
2) Ego Resiliency	0	--					
3) Stress	0	0	--				
4) Social Support	-4	0	-5	--			
5) Depression	23	-8	2	-3	--		
6) Child's Reacti-	13	-15	3	4	0	--	
7) Child's TBP	14	-5	-1	0	0	0	--

The sum of squared errors in the lower triangle is .132

The reliabilities of the variables in the model are

1) Psychopathology	1.00
2) Ego Resiliency	1.00
3) Stress	0.94
4) Social Support	0.75
5) Depression	0.79
6) Child's Reacti-	0.53
7) Child's TBP	0.94

Table 23

Path Analysis of Alcoholic Fathers' Variables Predicting COAs' Total Behavior Problems

Correlations (Corrected for attenuation)

	1	2	3	4	5	6	7	8	9	10
1	--									
2	76	--								
3	-25	-38	--							
4	19	35	-19	--						
5	33	48	-17	69	--					
6	20	38	-12	19	57	--				
7	23	29	-10	21	48	44	--			
8	-12	-25	37	6	-38	-50	-17	--		
9	-21	-19	38	-8	-32	-35	-22	25	--	
10	29	39	-11	18	34	28	42	-13	-30	--

Path Coefficients

	1	2	3	4	5	6	7	8	9	10
1										
2	76									
3		-32							32	
4		35								
5				70				-38	-17	
6					41			-31	-14	
7					27	21				27
8			37							
9										
10		26			22					

Table 23 (cont'd)

Standard Errors for Path Coefficients

	1	2	3	4	5	6	7	8	9	10
1										
2	6									
3		7							6	
4		7								
5				5				8	7	
6					8			8	7	
7					9	9				9
8			6							
9										
10		13			12					

Reproduced Correlations

	1	2	3	4	5	6	7	8	9	10
1	--									
2	76	--								
3	-25	-38	--							
4	27	35	-13	--						
5	26	33	-30	73	--					
6	16	20	-29	32	58	--				
7	17	22	-18	33	47	42	--			
8	-9	-14	37	-5	-44	-51	-26	--		
9	-21	-19	38	-7	-27	-30	-16	14	--	
10	25	33	-16	25	30	18	39	-13	-11	--

Errors: (Actual - Reproduced)

	1	2	3	4	5	6	7	8	9	10
1	--									
2	0	--								
3	0	0	--							
4	-8	0	-6	--						
5	7	15	13	-4	--					
6	4	18	17	-13	-1	--				
7	6	7	8	-12	1	2	--			
8	-3	-11	0	11	6	1	9	--		
9	0	0	0	-1	-5	-5	-6	11	--	
10	4	3	5	-7	4	10	3	0	0	--

Table 23 (cont'd)

The sum of squared errors in the lower triangle is .281

The reliabilities of the variables in the model are

1)	Fathers' Lifetime Alcohol Problems	0.90
2)	Fathers' Antisocial Behavior	0.63
3)	Fathers' Ego Resiliency	1.00
4)	Fathers' Stress	0.96
5)	Fathers' Depression	0.79
6)	Mothers' Depression	0.80
7)	Child's TBP	0.94
8)	Social Support	0.75
9)	Mothers' Ego Resiliency	1.00
10)	Child's Reactivity	0.53

Table 24

Path Analysis of Alcoholic Wives' Variables Predicting COAs' Total Behavior Problems

Correlations (Corrected for attenuation)

	1	2	3	4	5	6	7	8	9	10
1	--									
2	-25	--								
3	-27	25	--							
4	41	-35	-50	--						
5	28	-32	-38	57	--					
6	30	-21	-25	47	31	--				
7	21	-29	-13	28	34	18	--			
8	33	-22	-27	44	48	21	42	--		
9	-26	38	37	-12	-17	-11	-11	-10	--	
10	74	-11	-20	22	36	23	22	35	-16	--

Path Coefficients

	1	2	3	4	5	6	7	8	9	10
1										
2	-25									
3									37	
4			-29		37	28				
5		-22	-27							28
6	23				25					
7					34					
8				21	21		25			17
9		38								
10	74									

Table 24 (cont'd)

Standard Errors for Path Coefficients

	1	2	3	4	5	6	7	8	9	10
1										
2	6									
3									3	
4			8		8	7				
5		7	8							8
6	7				7					
7					9					
8				9	10		9			9
9		5								
10	6									

Reproduced Correlations

	1	2	3	4	5	6	7	8	9	10
1	--									
2	-25	--								
3	-27	25	--							
4	29	-23	-47	--						
5	34	-32	-38	57	--					
6	31	-14	-16	45	32	--				
7	11	-11	-13	20	34	11	--			
8	29	-16	-25	43	48	24	39	--		
9	-26	38	37	-22	-23	-12	-8	-14	--	
10	74	-11	-20	27	36	26	12	34	-16	--

Errors: (Actual - Reproduced)

	1	2	3	4	5	6	7	8	9	10
1	--									
2	0	--								
3	0	0	--							
4	12	-12	-3	--						
5	-6	0	0	0	--					
6	-1	-7	-9	2	-1	--				
7	10	-18	0	8	0	7	--			
8	4	-6	-2	1	0	-3	3	--		
9	0	0	0	10	6	1	-3	4	--	
10	0	0	0	-5	0	10	10	1	0	--

Table 24 (cont'd)

The sum of squared errors in the lower triangle is .139

The reliabilities of the variables in the model are

1) Mothers' Antisocial Behavior	0.83
2) Mothers' Ego Resiliency	1.00
3) Social Support	0.75
4) Mothers' Depression	0.80
5) Fathers' Depression	0.79
6) Mothers' Stress	0.96
7) Child's Reactivity	0.53
8) Child's TBP	0.94
9) Fathers' Ego Resiliency	1.00
10) Mothers' Lifetime Alcohol Problems	0.65

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