This is to certify that the

dissertation entitled

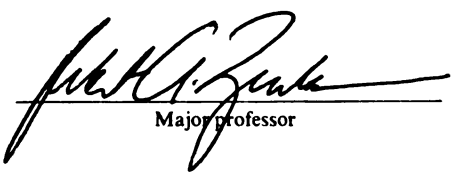
Relationships Between Treatment Process Characteristics and Outcome Among Alcoholic Families in an Early Child Intervention Program

presented by

Cynthia Lynn Nye

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Psychology



Major professor

Date June 13, 1995

RELATIONSHIPS BETWEEN TREATMENT PROCESS CHARACTERISTICS AND OUTCOME AMONG ALCOHOLIC FAMILIES IN AN EARLY CHILD INTERVENTION PROGRAM

By

Cynthia Lynn Nye

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

1995

ABSTRACT

RELATIONSHIPS BETWEEN TREATMENT PROCESS CHARACTERISTICS AND OUTCOME AMONG ALCOHOLIC FAMILIES IN AN EARLY CHILD INTERVENTION PROGRAM

By

Cynthia Lynn Nye

Research on parent training interventions has identified high levels of such family stressors as marital conflict, parent psychopathology, and socioeconomic disadvantage as being detrimental to treatment effectiveness. Only recently has this literature examined the role of treatment process characteristics as they relate to parent training outcome, and to pretreatment family disrupter variables. The present study examined the interplay between parent treatment investment, parent and therapist expectations, and parent and therapist satisfaction in predicting change in child behavior and parenting style among families participating in an early intervention program designed to reduce the development of antisocial behavior problems and later substance abuse among preschool-aged sons of alcoholic fathers. Parent expectations at pretreatment were observed to positively influence early parent investment in the intervention protocol, which in turn directly predicted child and parenting outcomes. Parent and therapist satisfaction ratings during treatment were positively associated with parent and therapists' expectations that the program would continue to promote change in the target child. Further, treatment investment and satisfaction were significantly correlated, but not predictive of one another with prior levels controlled. Parent investment across the span of the intervention was identified as a particularly salient influence on outcome, as only families who remained more invested throughout the intervention showed significant improvement in child behavior and parenting at termination. Baseline parent psychopathology, although correlated with child and parent outcomes, was generally identified as a more distal influence than treatment process characteristics.

ACKNOWLEDGEMENTS

In acknowledging the contributions of those who have facilitated the completion of this work, I would first like to thank Robert Zucker, who has served as an advisor, chairperson, mentor, and friend. His theoretical expertise and practical guidance have been vital to the conceptualization of this project, and of past research endeavors. Further, his dedication and commitment to the progress of his students have been instrumental in promoting my personal and professional growth over the past several years.

I wish next to recognize the assistance given by Susan Frank, who served as both an advocate and a resource during the initial stages of this project. In particular, I appreciate her help in molding my sometimes lofty ideas into more manageable research questions. Thanks are also extended to Michael Lambert and Thomas Reischl, whose valuable feedback assisted in the refinement of the current work. Special appreciation goes to Hiram Fitzgerald, who agreed without hesitation to become involved with this study on very short notice.

On a larger scale, this work would not have been possible without the efforts of Drs. Zucker, Fitzgerald, and Noll in creating the MSU Longitudinal Study; the exceptional work of Susan Refior in coordinating the many components of the project; and the many students who were instrumental in amassing the wealth of information contained in the data base. I am especially grateful to participating families, who allowed us to share in so many aspects of their lives.

Finally, I would like to acknowledge the personal support provided by friends and loved ones. In particular, I am deeply grateful to Kathy for her patience, love, tolerance, and encouragement throughout all phases of my professional development, and for helping me to successfully close this chapter of my life.

This work was supported in part by grants to R. A. Zucker, R. B. Noll, and H. E. Fitzgerald from the National Institute on Alcohol Abuse and Alcoholism (AA 07065); the Michigan Department of Mental Health, Prevention Services Unit; and from the Governor's Initiative Against Alcohol and Drug Abuse, Office of Substance Abuse Services, Michigan Department of Public Health.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

With an estimated 15.3 million adults in the United States suffering from alcohol abuse or dependence (U.S. Dept. of Health & Human Services, 1993), up to 28 million children (West & Prinz, 1987) are thought to be growing up with at least one parent who is not only alcoholic, but who may also have problems with depression, antisocial behavior, and other psychological disturbances associated with impaired parenting (Davies, Zucker, Noll, & Fitzgerald, 1989; Stoneman, Brody, & Burke, 1989) and poor child outcomes (Farrington & West, 1975; Jacob & Leonard, 1986; Lahey, Piacentini, McBurnett, Stone, Hartdagen, & Hynd, 1988; McCord, 1979; Merikangas, Prusoff, Pauls, & Leckman, 1985; Richman, Stevenson, & Graham, 1982; Robins, 1966; Robins, West, & Herjanic, 1975; Schneider, Sullivan, Bruckel, Fitzgerald, Zucker, & Noll, 1989; Stewart, DeBlois, & Cummings, 1980; Stewart & Leone, 1978). Such statistics suggest that a substantial number of children in these homes are themselves at risk for psychological impairment. In addition to heightened susceptibility for the development of alcoholism in later life, children with an alcoholic parent frequently exhibit symptoms of hyperactivity, conduct disorder, oppositional behavior, and delinquency (e.g. West & Prinz, 1987; Zucker & Noll, 1987) -- all of which have been identified as precursors to alcoholism and antisocial behavior in adulthood (Pihl & Peterson, 1991; Zucker, Fitzgerald, & Moses, in press). Further, research on children of alcoholics indicates that sons of alcoholic fathers are at particularly high risk for both early conduct problems, and later antisocial behavior and alcoholism. For example, an estimated 25 to forty percent of these sons are expected to become alcohol abusers in adult life (Zucker & Noll, 1987). Both the magnitude of this estimate and the prevalence of precursive behavioral problems among male children of alcoholic fathers argue for targeting this group of children for early intervention before problems with alcohol are evident. Such efforts, aimed at preventing or reducing the early behavioral correlates of later problem

drinking, may help to break the intergenerational transmission of alcoholism that frequently occurs in alcoholic families.

The present research focuses on one such program, the Michigan State University Multiple Risk Child Outreach Program (Zucker & Noll, 1987), which utilized an outreach protocol to contact and treat a group of families with preschool age sons, all of whom come from families with an alcoholic father. Initial analyses (Maguin, Zucker, & Fitzgerald, 1994) demonstrated that the program was successful in decreasing antisocial behavior and increasing prosocial behavior among these children both at mid-treatment and at the end of the program. However, evidence for sustained treatment gains was not observed during the six-month follow-up in regard to changes in negative child behavior. In addition, this initial outcome study identified variation in the extent to which families benefitted from the intervention, relative to whether one or both parents participated in the program. In order to test for potential differences in child outcome associated with one- versus two-parent treatment involvement, the protocol design included two conditions -- one in which both parents participated in the program, and one in which only the mother attended treatment sessions. Some differences in outcome were in fact found, as families in which both parents participated in the intervention experienced greater success in increasing their son's prosocial behaviors than did families in which only the mother participated.

Overall, then, the program was generally effective in promoting both immediate and longer-term improvement in the target child's behavior, although some variation in outcome was noted. Subsequent research (Nye, Zucker, & Fitzgerald, in press) examined family characteristics and treatment outcome more closely, and identified additional differences in the extent to which families experienced success with the treatment program. Although factors such as parent psychopathology and family resources were associated with the degree to which child

behavior became more positive and less negative by the end of the intervention, maternal treatment investment was identified as a critical variable in accounting both for observed variation in child outcome among treatment families, and for the relationship between pretreatment characteristics and treatment outcome. Specifically, significant improvement in child behavior by the end of the intervention was found only among those families who completed the program, and in which the mother cooperated with homework assignments and was more highly invested in the success of the regimen. In addition, maternal psychopathology was observed to affect treatment outcome indirectly, through a strong association with maternal treatment investment (Nye, 1992). Finally, maternal treatment investment was found to moderate the deleterious impact of low family resources on treatment success, such that economic deprivation did not impair the improvement of children whose mothers were more highly invested in the program.

Together, these findings indicate that treatment process characteristics, such as parent investment, are critical to an understanding not only of treatment outcome, but also of the impact of more distal parent and family characteristics on treatment effectiveness. However, only a few studies on family-based interventions have examined the influence of parent treatment compliance or investment on treatment outcome. Instead, this research has tended to focus on pretreatment parent, child, and family characteristics that are associated with subsequent treatment success. Although pretreatment characteristics have been linked with outcome, Patterson and Chamberlain (1988) have provided evidence that parent and family trouble do not directly predict outcome, but represent more distal disrupters to therapeutic interventions. From this perspective, pretreatment characteristics influence outcome by affecting the extent to which parents commit to and cooperate in parent training programs, which then impairs the acquisition of targeted child-rearing skills. Thus, it is parent cooperation or compliance that is most directly related to treatment outcome, through its association with change in parenting practices. In fact, Patterson

and his colleagues (e.g. Patterson, Chamberlain, & Reid, 1982) have demonstrated that higher levels of marital conflict and parent psychopathology and fewer family resources interfere with parent training by increasing client resistance to the treatment and disrupting the acquisition and application of appropriate child rearing practices.

In light of the identified primacy of treatment investment to the effectiveness of a variety of treatment programs and the relative paucity of treatment process research on parent training interventions, the present study was conducted in order to further examine the role of treatment process characteristics in accounting for outcome in a parent skills training program. The study focuses on families participating in the Michigan State University Multiple Risk Child Outreach Program (Zucker & Noll, 1987). This study represents a more in-depth exploration of treatment processes and outcomes among the subset of families who completed the intervention protocol. The goal of this work is to further understand how different aspects of treatment are involved in leading to better or worse outcomes. It was anticipated that such process characteristics as parent investment, parent and therapist expectations, and parent and therapist satisfaction, would represent direct or proximal influences on outcome, whereas pretreatment characteristics such as parent psychopathology and family socioeconomic resources would be more distally associated with treatment success.

The following sections describe the empirical support for the preventative approach used in the M.S.U. program, including an examination of the linkages between child antisocial behavior and later substance abuse, a review of characteristics which place male sons of alcoholic fathers at elevated risk for both early conduct problems and later difficulty with alcohol and other drugs, and a description of child- and family-focused substance abuse prevention approaches. Research on the influence of pretreatment characteristics on treatment outcome is then presented, as these were considered to be potentially important but more distal determinants of treatment

success in the current work. Finally, literature documenting the more proximal influence of treatment process characteristics on outcome is reviewed, with a particular emphasis on the relationships between treatment investment, expectations, and satisfaction in predicting outcome in family-based, parent skills training interventions. The study itself examines how these treatment process characteristics are associated with one another and with treatment outcome among the alcoholic families completing the M.S.U. Program, with pretreatment child, parent, and family characteristics controlled.

Risk Factors for Later Substance Abuse

Substantial research has been conducted in efforts to identify precursors to alcohol and other drug abuse in adolescence and early adulthood. Among the various risk factors, several characteristics of child and family functioning have been associated with later substance abuse. These factors include: 1) family alcohol use and attitudes, 2) poor and inconsistent disciplinary practices, 3) marital conflict, and 4) early and chronic antisocial child behavior (Hawkins, Catalano, & Miller, 1992).

Regarding child behavior, there is substantial evidence for a link between early antisocial behavior and both later antisocial behavior and substance abuse. Aggressive conduct problems displayed in childhood are often early signs of more severe antisocial behavior later on, and many researchers have pointed out the continuity of antisocial behaviors from childhood into adolescence and adulthood (Eron, Huesmann, Dubow, Romanoff & Yarmel, 1987; Gersten, Langer, Eisenberg, Simcha-Fagan & McCarthy, 1976; Loeber & Dishion, 1983; Windle, 1989). Furthermore, the earlier and more extreme such problems are, the more severe and chronic tends to be the behavior pattern in adolescence and adulthood (Loeber, 1986; Tolan & Lorion, 1988). From this perspective, an early onset of antisocial behavior is particularly predictive of continuity, and is also indicative of the severity of later antisocial acts. In addition, there is

substantial evidence that early antisocial behavior is predictive of adolescent substance abuse (Johnston, O'Malley, & Evelard, 1978; Kandel, Kessler, & Margulies, 1978; Robins, 1978; Wechsler & Thum, 1973).

Loeber (1986) has proposed that the developmental progression and outcome of antisocial behavior is largely determined by when and to what degree early conduct problems appear. According to this formulation, child antisocial behavior progresses over time from acts of minor severity to ones that are increasingly serious, with the worst outcomes including violent offenses and polydrug abuse. Further, this developmental pathway includes earlier initiation into alcohol use, which has been associated with subsequent misuse of alcohol (e.g. Rachal, Guess, Hubbard, Maisto, Cavanaugh, Waddell, & Benrud, 1982), and with greater involvement in other drug use (e.g. Fleming, Kellam, & Brown, 1982; Kandel, 1982).

As corroborated by other research (e.g. Collins, 1981; Halikas & Rimmer, 1974; Harwood & Leonard, 1989; Heather, 1982; Hesselbrock, Hesselbrock, & Stabenau, 1985; Kandel, 1982; Lewis, Moy, Jackson, Aaronson, Restifo, Serra, & Simos, 1985; Loeber, 1982; Mills & Noyes, 1984; Robins, 1966), early onset of child antisocial behavior is highly predictive of later delinquency, sociopathy, and substance abuse. Because of the strength of these relationships, early antisocial behavior has been identified as a potential marker for later substance abuse and, indeed, has been so identified in the present work, as well. In the following sections, these areas of risk are reviewed in more detail.

The Development of Child Antisocial Behavior

An extensive body of research indicates that parental disciplinary practices contribute substantially to the development of aggressive child behavior and adolescent delinquency (e.g. Cerkovich & Girodano, 1987; Lahey, et al., 1988; VanVoorhis, Cullen, Mathers, & Garner, 1988). In particular, poor supervision and lack of parental involvement in children's activities

have been identified as the two strongest parenting correlates of severe child conduct problems (Loeber & Stouthamer-Loeber, 1986).

Other authors have focused on inconsistent discipline as a precursor to antisocial child behavior (e.g. Patterson & Stouthamer-Loeber, 1984; Wells & Rankin, 1988). This latter model proposes a coercive process whereby parents respond irritably and/or ineffectively to their young child's coercive and aggressive behavior. Because of their ineffective discipline and monitoring of antisocial behavior, the parents are not able to maintain an appropriate level of compliance (Patterson & Bank, 1987). Over time, both the aggressiveness of the child and the ineffectiveness of the parents increase and serve to maintain one another. As a result, the child learns and develops this coercive pattern of behavior as a way of dealing with others, and later generalizes his antisocial interactional style to classroom and playground settings. In each new setting, the child's noncompliance and aggressiveness are responded to with aggression and rejection from others, thus recreating the negative interactions taking place in the home. As these cycles continue, the child's failure to acquire positive social skills, coupled with his coerciveness, "creates high risk for affiliation with delinquent peers, [thereby] further enhancing the development of chronic antisocial behavior" (Reid & Patterson, 1988, p. 115).

Other researchers (e.g. Dadds, 1987; Wahler & Dumas, 1987) also highlight the role that coercive parent-child interactions play in the development of antisocial behavior problems in children. According to Dadds (1987), for example:

> Although a diversity of factors may be associated with the development and maintenance of conduct/oppositional disorders in children, of primary importance are the moment-to-moment interactions that the child has with his/her primary caregivers. These are often marked by coercive, aggressive behaviors that may be functional for parents and children within the family system (p. 341).

Disrupters of Parenting

Given the apparent primacy of parenting factors to the development of child antisocial behavior, it is important to identify parent and family characteristics that impede parents' ability to adequately monitor and engage with their children. In this regard, both parent psychopathology (e.g. alcoholism, depression, and antisocial behavior) and marital conflict or discord have been implicated. Patterson and his colleagues have proposed a mediational model, whereby contextual variables such as parent psychopathology, stress, and economic disadvantage disrupt family processes (Patterson, Reid, & Dishion, 1992). Thus, these parent and family characteristics contribute to antisocial behavior in children to the extent that they disrupt day-to-day parenting practices and contribute to ineffective discipline and poor supervision. In fact, Reid and Patterson suggest that any such condition that disrupts or impedes the daily socialization of the child indirectly contributes to the subsequent development of child antisocial behavior. From this perspective:

> ...although many factors such as parent criminality, social and economic disadvantage, child temperament, and marital discord systematically affect the development of antisocial behavior, their influence is mediated by the extent to which they disrupt day-to-day parenting practices. Particularly... irritable, ineffective discipline and poor parental monitoring are the most proximal determinants of the early development and maintenance of antisocial behavior (Reid & Patterson, 1988, p. 126).

Similarly, Dadds (1987) states that the likelihood that parents will engage in coercive interactions with their children is related, in part, to marital satisfaction and social support characteristics. Thus, parent psychopathology, marital conflict, and economic deprivation may affect parents' child-rearing abilities which, in turn, contribute to antisocial behavior in the child. Others (e.g. Belsky, 1984; Belsky, Robins, & Gamble, 1984) have also described parental functioning as being multiply determined, with individual, interpersonal, and contextual factors all playing an important role.

Marital conflict. Belsky (1981) has proposed that the marital relationship is the principal support system for parents (especially mothers), and several studies have linked marital conflict to the development of child behavior problems (Emery & O'Leary, 1982; Jaffe, Wolfe, Wilson, & Zak, 1986; Johnson & O'Leary, 1976; Jouriles, Murphy, & O'Leary, 1989; McCord, 1979; Porter & O'Leary, 1980; Richman, Stevenson, & Graham, 1982; Wolfe, Jaffe, Wilson, & Zak, 1985). Research has also identified an association between marital discord and particular disciplinary strategies. For example, a high incidence of both interspousal aggression and parent-to-child aggression has been found among alcoholic families (e.g. Dielman, Barton, & Cattell, 1977; Ellwood, 1980; Famularo, Stone, Barnum, & Wharton, 1986; Leonard, Bromet, Parkinson, Day, & Ryan, 1985; Reider, Zucker, Noll, Maguin, & Fitzgerald, 1988).

Other research lends additional support to the link found between marital quality and parenting behavior (e.g. Brody, Pillegrini, & Sigel, 1986; Frank, Hole, Jacobson, Justkowski, & Huyck, 1986). Marital satisfaction has been found to be positively related to more positive and less punitive parenting (Johnson & Lobitz, 1974; Kemper & Reichler, 1976). Gottman and Katz (1989) found that maritally distressed couples displayed a cold, unresponsive, and angry parenting style that was low in limit setting and structuring. Further, this parenting style was associated with angry and noncompliant behavior in the young children. Similarly, Jouriles and his colleagues (Jouriles, Pfiffner, & O'Leary, 1988) observed an association between marital dissatisfaction and both parenting style and child deviance among a group of mothers and toddlers. Further, conflictual marital exchanges have been found to influence subsequent parent-son interactions, with sons observed to be less compliant with their father, and with fathers found to issue more vague or confusing commands toward their son at the beginning of the observation session (Jouriles & Farris, 1992). Particularly noteworthy in this last study is the fact that the sons had not witnessed the conflict between the parents prior to interacting with their fathers, but

were nonetheless more oppositional than sons whose parents had not previously had a conflictual interaction.

Fauber and his colleagues (Fauber, Forehand, Thomas, & Wierson, 1990) examined the extent to which the relationship between marital conflict and the psychological adjustment of young adolescents is mediated by parenting behavior. Parenting characteristics were observed to be directly associated with child internalizing symptoms, with marital conflict only associated via its impact on parenting. Parent marital conflict was observed to have both direct and indirect influences on externalizing symptoms among the sample of adolescents whose parents were not divorced, but only an indirect effect via parenting for adolescents whose parents were divorced. The authors propose that marital conflict may contribute to child acting-out behaviors both by impairing parenting practices and by exposing children to confrontational or aggressive interactions.

Parent psychopathology. Parent alcoholism, antisociality, and depression have all been associated with child antisocial behavior (e.g. Farrington & West, 1975; Jacob & Leonard, 1986; Lahey, et al., 1988; McCord, 1979; Merikangas, et al., 1985; Reider, Zucker, Maguin, Noll, & Fitzgerald, 1989; Richman, et al., 1982; Robins, 1966; Robins, et al, 1975; Schneider, et al., 1989; Stewart, et al., 1980; Stewart & Leone, 1978). However, few studies have directly examined the direct influence of these disorders on specific child rearing practices. Kuczynski (1984) has suggested that parents who are experiencing distress or depression choose more automatic and less cognitively taxing discipline strategies, rather than more purposive and effortful techniques, such as rational guidance. Others (e.g. Brody & Forehand, 1986) propose that parental depression and other dysfunctions in parental adjustment can decrease the parent's tolerance for noncompliance, thereby making even innocuous behaviors seem bothersome. This, in turn, may lead to a greater use of punishment and authoritarian control at a time when the

parent is typically trying to limit his/her interactions with the child. The result is the development of the coercive style of parent-child interactions thought to underlie child antisocial behavior (e.g. Patterson, 1982).

These theoretical formulations have been supported by observational research on depressed women (Hops, Biglan, Sherman, Arthur, Friedman, & Osteen, 1987), as interactions between these women and their families have been found to be highly aversive in nature. In contrast, Stoneman and her colleagues (1989) found both marital and individual distress in men to be predictive of inconsistent fathering and lack of parental agreement about discipline, while no such effects were found for women.

In one of the few studies explicitly focused on a sample of alcoholic parents, Davies and his colleagues (Davies, Zucker, Noll, & Fitzgerald, 1989) examined the relationship between several types of parental psychopathology and child-rearing practices among young alcoholic families in the Michigan State University Longitudinal Study. More specifically, the researchers studied the association between self-reported parenting practices and parent symptomatology for alcoholism, depression, and antisocial behavior. For the alcoholic fathers, problems in the reported affective relationship with the child were strongly associated with the father's self-reported depression, as well as with his current level of alcohol consumption and his lifetime alcohol problems. Further, the antisocial behavior of the fathers was related to inconsistent discipline and an increased demand for the child to be independent. Other studies with the same group of alcoholic fathers (Fitzgerald, et al., 1989; Reider, et al., 1989; Zucker, Weil, Baxter, & Noll, 1984) confirm the influence of paternal antisocial behavior on father-child interactions and on child behavior problems.

Among the mothers in the Davies (et al., 1989) study, both antisocial behavior and depression were associated with a disrupted parent-child affective relationship. In addition,

paternal depression had a deleterious effect on maternal child rearing. This corroborates other research with these families (Schneider, et al., 1989) which found that paternal depression may indirectly affect child outcome by increasing maternal depression and impairing mothers' child-rearing practices. It also underscores the influence that parental psychopathology can have on specific child rearing behaviors among alcoholic families.

Observations of parent-child interactions among families in the M.S.U. study revealed some differences in psychopathology and parenting behavior among parents in alcoholic versus nonalcoholic families. Parents in the alcoholic families had more extensive histories of antisocial behavior, and demonstrated greater difficulty in engaging their children. In addition, these parents displayed less warmth and affection toward their children during a clean-up session than did nonalcoholic parents (Whipple, Fitzgerald, & Zucker, 1995).

Chassin and her colleagues (Chassin, Pillow, Curran, Brooke, Molina, & Barrera, 1993) found that maternal alcoholism was related to impaired monitoring of adolescents' activities by both mothers and fathers (which, in turn, was related to adolescents' substance use and affiliation with drug-using peers). Fathers' monitoring was further affected by level of parent antisociality.

Thus far, this review of the literature has focused on the interconnections between child antisocial behavior, parenting practices, marital conflict, and parent psychopathology -- all of which have been associated with the development of substance abuse (Hawkins, et al., 1992). However, given the evidence that children of alcoholics are at elevated risk for alcoholism as adults (e.g. Sher, Walitzer, Wood, & Brent, 1991; West & Prinz, 1987), the relationship between parent alcoholism and child substance abuse needs to be more explicitly described. The following section focuses on what is currently known about parent alcoholism as a risk factor in the development of child antisocial behavior and later substance abuse.

Parent Alcoholism, Child Behavior, and Later Substance Abuse

The impact of alcoholic parents on the functioning of children has been well documented in the psychological literature (e.g. Adler & Raphael, 1983; Lord, 1983; Roosa, Sandler, Beals, & Short, 1988; Rydelius, 1981; Seixas, 1977; West & Prinz, 1987). Such studies have identified a relationship between antisocial child behavior and parental alcoholism, and male offspring in particular have been found to be at risk for conduct disorder and antisocial behavior in childhood, substance use and delinquency in adolescence, and alcoholism and antisocial personality as adults (e.g. Zucker & Noll, 1987).

Although the research indicates that children of alcoholics are at increased risk for developing problems with alcohol themselves (e.g. Bennett & Wolin, 1985; Cotton, 1979; Goodwin, 1985), the mechanisms by which risk evolves into actual trouble require further explication. Thus far, the impact of parent alcoholism on children has been explained in a number of ways, including genetics, modeling, and other family influences:

> Beyond the genetic transmission of a propensity to alcoholism in males, family modeling of drug using behavior and parental attitudes toward children's drug use are family influences related specifically to the risk of alcohol and other drug abuse. Poor parenting practices, high levels of conflict in the family, and a low degree of bonding between children and parents appear to increase the risk for adolescent problem behaviors generally, including the abuse of alcohol and other drugs (Hawkins, et. al., 1992, p. 82).

Although male children of alcoholic fathers seem to be at disproportionate risk for alcoholism, there is also evidence that these "high risk" offspring do not uniformly develop problems with alcohol (Alterman, Bridges, & Tarter, 1986; Knop, Teasdale, Schulsinger, & Goodwin, 1985; Schuckit & Sweeney, 1987). Thus, it is necessary to examine variation among alcoholic families that may place children at greater or less risk for substance abuse problems. As noted in the study by Chassin and her colleagues (Chassin, et al., 1993), for example, risk for substance abuse among early adolescent children of alcoholics was directly related to parent

levels of alcohol consumption, and more indirectly influenced by the impact of parent alcoholism and antisociality on parents' monitoring of their children's behavior (which, in turn, influenced affiliation with drug-using peers). Further, the authors noted that more extensive parent alcoholism was associated with greater environmental stress, the latter of which also predicted the adolescent substance use and affiliation measures.

Typologies of Alcoholism

There is growing evidence that alcoholism is not a unitary entity, but that its development and course may follow different trajectories. Cloninger has distinguished between Type II (or "male limited") alcoholism and Type I (or "milieu limited") alcoholism. Under this formulation, Type II alcoholism represents an early onset form of alcoholism that is thought to be largely driven by genetic mechanisms. In contrast, Type I alcoholism develops later, and is associated more with environmental than genetic factors (e.g. Cloninger, 1987). In terms of diagnostic differences, Type I alcoholics are thought to suffer more psychological distress about their alcohol use, whereas Type II alcoholics tend to experience more negative social consequences (e.g. loss of job, family arguments, etc.) because of their drinking. Type II alcoholics are further distinguished as having an earlier onset of alcohol abuse, with heavy drinking beginning before the age of 25.

Although recent research lends some support to these subtypes, it also indicates that even Type II alcoholism may be associated with risk factors other than family alcoholic history. In examining different developmental pathways associated with the two subtypes, Zucker and his colleagues (Zucker, Ellis, & Fitzgerald, 1993a, 1993b) found that an alcoholic rearing environment (e.g. being raised by an alcoholic parent) was associated with alcoholic severity for Type I alcoholics, whereas extended family history of alcoholism was associated with later alcoholic trouble for Type II alcoholics. In addition, Type II alcoholism was associated with both

childhood antisocial behavior and adult antisociality. Thus, early conduct-disordered behavior was predictive of later antisocial behavior and alcohol abuse for Type II alcoholics, beyond the influence of alcoholic family background.

Despite finding some evidence in support for Cloninger's subtypes, Zucker and his colleagues (Zucker, et al., 1993b) have proposed an alternative schema based on the association between antisociality and alcohol problems in adulthood, and on the developmental continuity found between antisocial behavior in childhood and adulthood. The authors classified subjects as either antisocial alcoholics (AALs) or non-antisocial alcoholics (NAALs), based on a median split of lifetime antisocial behavior. According to this approach, the higher scores of the antisocial alcoholics "indicate a trajectory which begins early in life with aggressive/antisocial behavior, and which thereafter crystallizes in alcoholism and antisociality in adulthood" (p. 13). In examining differences between the two typologies, the authors found that antisocial alcoholics had an earlier onset of alcohol problems, more extensive alcohol-related difficulty, lower socioeconomic status, greater lifetime and current depression, and a more extensive family history of alcoholism. In models predicting severity of alcoholism, both child and adult antisociality and family history of alcoholism were significant for antisocial alcoholics, while variations in alcohol difficulty for non-antisocial alcoholics were predicted only by lifetime depressive symptomatology.

Research on adolescent alcohol use onset supports the identification of different developmental pathways related to drinking. Weber and his colleagues (Weber, Graham, Hansen, Flay, & Johnson, 1989) examined drinking patterns over time among "Type II" adolescents -- who were identified as being "problem behavior prone", based in part on their apathy toward the reactions of significant others' toward their alcohol use as well as their greater association with alcohol-using peers -- and among "Type I" adolescents who the authors describe as being more

"normally socialized". Type II adolescents showed significantly higher rates of alcohol use and drunkenness at follow-up than did the Type I sample, thereby suggesting an accelerated progression of substance abuse among the problem behavior prone group. Although this study did not directly measure differences in externalizing or antisocial behavior problems between the two groups, one might expect a greater degree of antisociality among the Type II adolescents, given their greater affiliation with delinquent peers and their relative indifference to social cues about their drinking.

In light of these indications that alcoholism may develop and progress in at least two, if not more (Zucker, in press) separate pathways, type of parent alcoholism may be differentially associated with child functioning. Support for this hypothesis may be found in the Zucker (Zucker, et al., in press) study, which identified a higher level of externalizing behaviors among preschool age sons of antisocial alcoholics. This finding presents preliminary evidence that these young male sons of antisocial alcoholic fathers may themselves be at risk for the development of antisocial alcoholism.

Alcohol-specific and Non-alcohol-specific Influences

In addition to examining differences in alcoholism subtypes as they related to child risk for substance abuse, research has also attempted to differentiate the influence of factors specifically related to alcohol use and those not directly pertaining to alcohol consumption (e.g. Zucker, 1993). Zucker and Fitzgerald (1991) emphasize the importance of pursuing both of these latter areas of inquiry into risk for alcoholism:

> One line focuses on ways in which children are exposed to and learn about the idea that alcohol is a substance that can be used to create a change in how one feels and how one acts. The other line of investigation examines factors that are not specific to alcohol use, but that precede it and are parts of the causal chain of problem alcohol involvement (p. 19).

Alcohol-specific risk factors. There is evidence that even very young children can

recognize and identify alcoholic beverages, are aware that alcoholic beverages are special substances, and recognize that there are cultural norms regarding their consumption (Noll, Zucker, & Greenberg, 1990; Noll, Zucker, Weil, & Greenberg, 1984). Noll and his colleagues reported that preschool-age children in their study identified alcoholic beverages as being adults' beverage of choice, and tended to select alcohol for men to drink more often than for women (Noll, et al., 1984). In addition, children who were more successful at recognizing alcoholic beverages (by smell) tended to come from homes in which there was heavier parental drinking (Noll, et al., 1990). Thus, children from families in which there is more extensive and problematic alcohol use seem to be differentially socialized about drinking practices and may develop expectancies about alcohol at an earlier age (Miller, Smith, & Goldman, 1990; Zucker & Fitzgerald, 1991; Zucker, Kincaid, Fitzgerald, & Bingham, in press). This finding is particularly important in light of evidence indicating that children's expectations about alcohol use are related not only to parental patterns of alcohol use, but also to the children's own subsequent patterns of use in adolescence (Brown, Creamer, & Stetson, 1983; Christiansen & Goldman, 1983). Further, research has suggested that initiation into the use of a substance is preceded by attitudes in favor of its use (Kandel, Kessler, & Margulies, 1978; Krosnick & Judd, 1982; Smith & Fogg, 1978).

There is also evidence that drinking-specific variables, such as history, frequency, amount, consequences, and current consumption, have an impact on family relationships and parent-child interactions. For example, an individual's history of lifetime alcohol problems is related to several aspects of functioning in alcoholic families. As described above, Chassin and her colleagues (Chassin, et al., 1993) found an association between maternal alcoholism and father and mother monitoring of their adolescent's activities. In addition, level of father and mother alcoholism was related to greater environmental stress. Reider and her colleagues

(Reider, et al., 1988) examined interspousal aggression among 75 working-class couples from the Michigan State University Longitudinal Study. Husbands reporting higher levels of violence towards their wives in the past year were younger, had a more extensive history of drinking problems, and engaged in more antisocial activity. In those families, wives also were younger in age and were currently drinking less alcohol than were the wives of husbands reporting lower levels of violence. Greater lifetime alcohol problems and higher levels of prior antisocial activity in both men and women were also found to be associated with the number of marital separations.

Regarding the family environment in these homes (as measured by the FES (Moos & Moos, 1981)) greater conflict was experienced by husbands who had a more extensive history of alcohol-related problems, and both greater conflict and less family cohesion were experienced by husbands and wives who reported higher levels of violence towards their spouses. In accounting for the alcoholic husband's violence towards his wife, the husband's age and his long-term drinking problems were the best predictors of the overall level of violence, and the prior antisocial behavior of the husband was predictive of the more severe forms of violence reported.

In another study, Reider and her colleagues (1989) found that child-directed parental aggression was positively related to the extent of antisocial behavior, depression, and long term alcohol involvement in the male alcoholics and their partners. Further, parental aggressiveness and lifetime alcohol problems were found to be the most predictive of aggression directed against the young male children targeted in the study.

These studies suggest, then, that an extensive history of alcohol-related difficulties is associated with physical marital conflict, marital separation, and reciprocal aggression between parents and children -- all of which may place children at risk for substance abuse (Hawkins, et al., 1992). Similarly, Leonard and his colleagues (1985) found a relationship between reported history of alcohol-related problems and physical marital conflict. Davies and his associates

(1989) discovered that child aggression against the parents, and disengaged and inconsistent fathering were related to the lifetime alcohol problems of both the alcoholic fathers and their partners. Further, reported problems in the fathers' affective relationship with the child were related to self-reported depression, and to both lifetime alcohol problems and current alcohol consumption.

Several other studies also suggest that the alcoholic's current level of consumption is intimately tied to other aspects of ongoing family relationships. The series of Moos studies (Moos, Finney, & Chan, 1981; Moos, Finney, & Gamble, 1982; Moos & Moos, 1984), conducted with a somewhat older sample than the Michigan State project, compared the functioning of relapsed, recovered, and nonalcoholic individuals and their families. Children of recovered alcoholics (no longer drinking at the 18 month post-treatment follow-up) were reported by the parents to be functioning as well as the children in the community control group (Moos & Billings, 1982). In contrast, children of relapsed alcoholics had more emotional and physical problems than the children in the other two groups. Further, children in the relapsed group were living in an environment that was described (on the FES) as being lower on family cohesion, expressiveness, parental congruence, and family activities. This suggests, then, that child functioning is impaired by family difficulties related to the alcoholic's consumption of alcohol.

In other Moos studies (Moos, Finney, & Chan, 1981; Moos, Finney, & Gamble, 1982; Moos & Moos, 1984) relapsed alcoholics and their families also appeared to be functioning more poorly than the recovered alcoholic and the nonalcoholic families on a variety of dimensions. For example, relapsed alcoholics reported more depression, anxiety, and physical symptoms. Consistent with other research (Filstead, McElfresh, & Anderson, 1981), these individuals also described their family environment (on the FES) as being less cohesive, expressive, and organized, and more conflictual than did members of the recovered and nonalcoholic groups

(Moos, et al., 1981).

The spouses of these relapsed individuals (Moos, et al., 1982) provided similar reports of distress. They reported more negative life events and perceived less cohesion in their families than did spouses of recovered and nonalcoholic individuals. Further, spouses of heavily drinking relapsed alcoholics were more depressed, more anxious, engaged in fewer informal social activities, and reported more negative life events than the spouses of relapsed alcoholics who were trying to control or reduce their consumption. Spouses of heavy drinkers also perceived their family as being more conflictual, less cohesive and organized, and with less of a recreational orientation.

These findings indicate that both the drinking status and the consumption pattern of the alcoholic partners interconnect with the functioning of the marital partner and with parent perceptions of the home environment. It is not unreasonable, therefore, to conclude that such differences at the parental level are likely to influence these parents' interactions with their children. A later study by Moos and Moos (1984), using different groups of alcoholics and matched community controls, provides further confirmation of this. Not only were families of relapsed alcoholics described as less cohesive and expressive than were the other families, but families of heavily-drinking relapsed alcoholics again seemed to be the most disrupted, with more family arguments, lower cohesion, more conflict, and less organization. Regression analyses determined that:

> the families of the [recovered and relapsed] alcoholics were strongly affected by the level of adaptation of the alcoholic partners. Families in which the alcoholic members reported more alcohol consumption and drinking problems and complained of more anxiety, depression, and physical symptoms had more family arguments, less cohesion and expressiveness, and showed less agreement about their family environment and about joint task performance...Cohesion was [also] lower in families in which the spouses complained of more anxiety, and expressiveness was lower in families in which they complained of more depression...(p. 115).

Other research (e.g. Dunn, et al., 1987; Jacob, 1987; Jacob, Ritchey, Cvitkovic, & Blane, 1981; Steinglass, 1980a, 1980b, 1981, 1987; Steinglass, Tislenko, & Reiss, 1985) has also found a relationship between current alcohol consumption patterns and disrupted family interactions and relationships. With regard to parent-child interactions, Seilhamer and Jacob (1990) generate an important causal hypothesis that attempts to link these findings:

> (a) there is an ongoing association between parental drinking and the parent-child relationship, (b) this association involves a causal relationship, in that drinking/intoxication effects disturbances in the parent-child relationship, and (c) while parental alcoholism is assumed to cause negative outcomes for children in the long run, the quality of the parent-child relationship during day-to-day cycles of sobriety and intoxication may vary with drinking pattern and consumption level (p. 30).

Non-alcohol-specific risk factors. Research on alcoholics has identified a high rate of comorbidity between alcoholism and other forms of psychopathology. For example, the national Epidemiologic Catchment Area (ECA) Study estimates that 37 percent of the general population with an alcohol abuse/dependence diagnosis also qualifies for an additional diagnosis not related to substance abuse (Regier, Farmer, Rae, Locke, Keith, Judd, & Goodwin, 1990). Further, this rate is even higher (55%) among alcoholics in treatment, suggesting that comorbidity is particularly prevalent among individuals with severe alcohol involvement. Among the most frequent comorbid diagnoses for this group are anxiety disorder (19%), antisocial personality (14%), and affective disorders (13%) (Regier, et al, 1990).

As already shown, parent characteristics not specifically related to alcohol consumption can also have an impact on family interactions. In particular, this research has identified other types of parent trouble, including antisociality and depression, that affect the home environment. For example, Reider and her colleagues (1989, 1988) found an association between parent antisocial behavior and depression and child-directed aggression, and between the prior antisocial behavior of the parents and physical marital conflict among the young alcoholic families of the

Michigan State University Longitudinal Study. Chassin and her colleagues (Chassin, et al., 1993) found an association between parent antisociality and fathers' monitoring of their adolescent child's activities.

Others (e.g. Merikangas, et al., 1985; Reider, et al., 1989; Schneider, et al., 1989) have observed that depression in alcoholic parents and/or their spouses is related to child antisocial behavior. Reider, et al. (1989) found that young male children's aggression towards their parents was related to depression in mothers and fathers, as well as to the lifetime alcohol problems of the parents. In a study focusing on secondary alcoholism in parents with major depression (Merikangas, et al., 1985), adult offspring of depressed parents had a much higher rate of antisocial personality than did the adult controls. Similarly, younger children of the probands had a greater incidence of conduct disorder than did the controls. When parental alcoholism as a secondary diagnosis was considered, the risk of antisocial behavior and of conduct disorder was markedly increased. Additionally, offspring of two alcoholic parents had a greater rate of antisocial personality or conduct disorder than did offspring with only one alcoholic parent.

Because of the frequent co-occurrence of other forms of psychopathology with alcoholism, it is also important to examine the extent to which risk for alcoholism is associated with the cumulation of parent psychopathology, or whether each disorder seems to have unique effects on child functioning. As described above, Davies and his colleagues (Davies, et al., 1989) examined the effects of parent psychopathology on child-rearing behavior among alcoholic families in the Michigan State Longitudinal Study. Both paternal depression and alcohol problems were associated with difficulties in the fathers' affective relationship with the male target child, while the quality of the mother-child relationship was negatively associated with maternal depression and antisociality. In addition, paternal antisocial behavior was related to inconsistent discipline and demands that the child be more independent among the fathers.

Similarly, Chassin (Chassin, et al., 1993) found an association between parent antisociality and impaired monitoring by alcoholic fathers of young adolescent children.

Other research by Chassin and her colleagues (Chassin, Rogosch, & Barrera, 1991) indicates that symptomatology among children of alcoholics may be related to different aspects of parent functioning. In this study of a community sample of adolescents and their parents, the authors identified an alcoholic sample in which 74.6% of the alcoholic fathers and 58.5% of the alcoholic mothers reported an early onset of drinking problems (on or before age 25). Comorbidity rates were fairly comparable to the ECA data for alcoholic men and women (Helzer & Pryzbeck, 1988), with a 5.5 % prevalence for major depression and a 16.4% prevalence of antisocial personality among the men, and rates of 12.1% and 15.5% of depression and antisocial personality, respectively, among the women. Overall, the authors noted that the group of adolescent children of alcoholics was characterized by lower parent education, greater parent drug use, more environmental stress and family disruption, and higher rates of parent psychopathology than the control group (Chassin, et al., 1991).

In predicting adolescent symptomatology from parent psychopathology measures, the Chassin group found that adolescents' externalizing behavior was related to parent antisociality, while fathers' alcoholism was a significant predictor of both alcohol use and substance-related consequences or dependence symptoms among the adolescents. Parent antisocial personality did not make a unique contribution to the prediction of alcohol use, but was associated with adolescent drug use. In examining differences among children of current (past 3 years) versus recovered alcoholics, the authors further noted that externalizing symptomatology was higher among children of current alcoholic fathers than among those whose fathers were no longer drinking. Thus, parent alcoholism may differentially affect child antisocial behavior when current consumption is taken into account. This has been supported by other research indicating higher

levels of functioning among recovered versus relapsed alcoholics, and among spouses and children of the recovered group (Moos, Finney, & Chan, 1981; Moos, Finney, & Gamble, 1982; Moos & Moos, 1984).

Together, these findings indicate that different aspects of parent functioning may have independent effects on both child and family functioning, thereby making unique, as well as additive, contributions to risk for substance abuse and its sequelae. In particular, this research identifies parent antisociality as an important predictor of child acting out behavior (Chassin, et al., 1991; Fitzgerald, et al., 1989; Reider, et al., 1989; Zucker, et al., 1984; Zucker, et al., in press), parental monitoring and disciplinary practices (Chassin, et al., 1993; Davies, et al., 1989), and level of marital conflict and violence (Reider, et al., 1988, 1989). Parent alcoholism appears to have a direct influence on child alcohol use (Chassin, et al., 1991, 1993), in addition to an association with marital aggression (Reider, et al., 1988, 1989), and disrupted parenting (Chassin, et al., 1993; Davies, et al., 1989; Whipple, et al., 1995). To the extent that both antisocial personality and alcoholism co-occur in parents, children in these homes may be particularly vulnerable to both antisocial behavior and substance abuse themselves.

The Question of Multiple Risk

Zucker (1976) has suggested that, as the primary socialization factors in a young child's life, "the parent reward structure and modeling alternatives available within the family for imitation" (p. 226) may foster a deviant pattern of antisocial behavior in the child. This, in turn, disrupts the family's affectional relationships and contributes to tension and conflict in the home. The literature reviewed above points to parental alcoholism, antisocial behavior, and depression, and to marital conflict as correlates of child-rearing practices and child antisocial behavior. Other studies (e.g. Richman, et al., 1982; McCord, 1979) indicate that these characteristics may operate as multiple risk factors for the development of child antisocial behavior, and later substance

abuse. Richman (et al., 1982) found that parent psychological distress, marital conflict, and child-directed parent hostility were all related to child behavior. Such multiple indicators of disharmonious relationships in the family were also associated with the later development of antisocial behavior problems among children who had not exhibited these difficulties earlier. Similarly, McCord's (1979) study of boys in a program designed to prevent delinquency revealed the impact of multiple family risk factors both on the development of antisocial behavior and on the effectiveness of a treatment program intended to prevent such an outcome. Several factors relating to the boys' home environment were associated with their criminal behavior as adults: high parental conflict and aggression were both positively related to crimes against persons committed by the sons, while lower maternal affection and greater father deviance (alcoholism and/or criminality) were positively related to property crimes. Level of supervision and mother's self-confidence were related to both types of antisocial activity. Given the developmental continuity between child antisocial behavior and later alcoholism, this literature suggests that both of these aspects of child functioning are influenced by multiple risk factors.

The Prevention of Alcoholism

Hawkins and his colleagues (Hawkins, et al., 1992) have proposed that efforts to prevent the abuse of alcohol and other substances must adopt a risk-focused approach, in which attempts are made to modify and/or eliminate precursive factors. In light of evidence that the risk for substance abuse is increased in the presence of multiple risk factors, preventative efforts should address more than one area of difficulty. It is also recommended that preventative interventions target populations that are at the greatest risk for developing problems with alcohol. Similarly, others (e.g. Weber, et al., 1989) have emphasized the need to tailor intervention strategies to specific risk factors within each targeted population.

Given the evidence that parent alcoholism, poor parenting practices, marital conflict, and

child antisocial behavior are all precursive to the development of alcoholism (Hawkins, et al., 1992), prevention programs should target child populations in which several of these risk factors are prevalent. Other prevention programs appear to operate under the assumption that all individuals are at relatively equal risk for developing problems with alcohol, "an assumption that is clearly at variance with the evidence" (Alterman & Tarter, 1983, p. 153). A better strategy might be to identify and target populations that are at heightened risk for later alcoholism. In light of substantial documentation, described above, that children who develop problems with antisocial behavior at a young age are at risk for substance abuse later on, and that sons of alcoholics are highly susceptible to both early aggressive behaviors and later alcoholism, young male children in alcoholic homes represent a critical group for preventative efforts. Further, the associations found between parent and child antisocial behavior in general (e.g. Chassin, et al., 1992), and antisocial alcoholism and childhood risk in particular (e.g. Zucker, et al., in press), indicate that the population of antisocial alcoholics and their children is one especially appropriate for early intervention.

Such an approach is further supported by ongoing research, which has identified a variety of differences between alcoholic and community contrast families participating in the Michigan State Longitudinal Study (Zucker, Noll, & Fitzgerald, 1988). Focusing on the development of preschool-age sons of alcoholic fathers, a substantial proportion of whom meet formal diagnostic criteria for antisocial personality (Zucker, Noll, & Fitzgerald, 1988), this research has already found that a) the high-risk male children are more familiar with alcoholic beverages than are the matched control children (Noll & Zucker, 1983), b) there is a significant relationship between parental alcoholism and intrafamilial conflict and violence (Reider, et al., 1988, 1989), c) parent-child relationships are compromised by depression, antisocial behavior, and alcohol problems among the parents (Davies, et al., 1989), and d) these young sons of alcoholic fathers tend to

engage in more aggressive and antisocial behaviors than their community counterparts (Fitzgerald, et. al., 1988).

The prevalence of these multiple risk factors within this group of alcoholic families supports efforts to target this population for preventative efforts. Since sons of antisocial alcoholics are at particularly high risk for conduct disorder and its sequelae in childhood, and for alcoholism and antisocial personality disorder later on, the impact of interventions on the subsequent functioning of male children should represent an important marker of the effectiveness of alcoholism prevention programs. With these considerations in mind, the Michigan State University Multiple Risk Child Outreach Program (Maguin, Zucker, & Fitzgerald, 1994; Zucker & Noll, 1987) was conducted as a prevention program designed to reduce the onset and/or progression of antisocial behavior problems among preschool-age sons of alcoholic fathers, by modifying child management practices used by the parents. Because of the continuity between early antisocial behavior and later alcoholism, it was anticipated that addressing child behavior problems early on would ultimately have a preventative effect on later displays of both antisocial behavior and substance abuse. However, given the evidence that these are multiproblem families, the program also sought to improve marital communication and conflict-resolution skills, and to begin to address problems with alcohol abuse within the family. The longer-term goal was to reduce the prevalence of alcoholism among the male target children, by addressing these multiple risk factors early on.

The remainder of this chapter briefly highlights the empirical support for the particular treatment approach used in this study, provides a description of the strategies and theoretical rationale upon which the Michigan State program is based, and discusses factors that have been identified as determinants and disrupters in the treatment of child antisocial behavior. The final segment of the literature review examines current parent training process and outcome research,

and describes pretreatment parent and family characteristics that have been found to influence treatment investment or treatment success.

Parent Training Approaches to Child Antisocial Behavior

Although several types of treatment approaches for antisocial children have been developed, parent skills training strategies have received extensive empirical support as an effective means of intervening in families with an antisocial child (e.g. Dumas, 1989; Gard & Berry, 1986; Kazdin, 1985, 1987). The effectiveness of parent training approaches is consistent with the conduct disorders literature, which has identified parenting variables related to harsh, inconsistent discipline and poor supervision (Loeber & Dishion, 1983; Loeber & Stouthamer-Loeber, 1986) as the most reliable predictors of future antisocial behavior. Common among the various forms of parent training is the focus on parent-child interactions in the home. Of particular concern are the coercive exchanges that Patterson (e.g. 1986) and others (Dadds, 1987; Wahler & Dumas, 1987) have identified as playing a central role in promoting aggressive child behavior. Parents are first taught to identify, define, and observe problem behaviors in a new way, and then learn procedures to implement at home. The therapist's role is to instruct and guide parents in the use of positive reinforcement, selective attention, mild punishment, negotiation, and contingency contracting techniques to modify those target behaviors. The sessions enable the parents to learn and practice these new techniques and to discuss their implementation in the home. The goal, then, is to develop specific child-rearing skills in the parents that will enable them to effectively monitor and manage their children and to break out of the hostile exchanges, coercive cycles, and inconsistent patterns that characterize parent interactions with antisocial children (Jaffe, et al., 1986; Jouriles, Barling, and O'Leary, 1987; Horne, 1981; Kratcoski, 1982; Olweus, 1980; Richman, et al., 1982; Stewart & Leone, 1978; Walker, Downey, & Bergman, 1989).

One such program, Social Learning Therapy, provided the framework for the current intervention. This approach is based on Gerald Patterson's work in modifying coercive family systems thought to contribute to child antisocial behavior (Patterson, 1976; Patterson, Chamberlain, & Reid, 1982). Social Learning Therapy is somewhat different from more typical parent training interventions in that it incorporates specific instruction for parents regarding social learning principles. Thus, parents are not only taught how to modify specific behavior problems, but are also educated about the underlying rationale governing the particular parenting techniques. Those who have included this component into parent training interventions have argued that providing parents with specific training in social learning principles is more efficient than focusing solely on discrete target behaviors (Patterson, Cobb, & Ray, 1973), that parents need to understand the theoretical framework in order to adequately employ the techniques (Tharp & Wetzel, 1969), and that generalization to other parent-child interactions is more likely to occur when parents understand the principles behind the interventions (Forehand & Atkeson, 1977). There is also some empirical evidence that treatment-related improvements in child behavior and parenting are enhanced when parents are instructed about social learning principles in addition to learning how to manage specific problem behaviors (McMahon, Forehand, & Griest, 1981). The specifics of the program used in the current intervention will be described in further detail later on.

Parent Training and Substance Abuse Prevention

Given the well-documented association between child antisocial behavior and the development of substance abuse problems (Kandel, 1982; Loeber, 1982; Robins, 1966), as well as the role that parent supervision and monitoring behaviors appear to play in both child antisocial behavior (Loeber & Dishion, 1983; Loeber & Stouthamer-Loeber, 1986) and adolescent substance abuse (e.g. Chassin, et al., 1993), parent skills training and family therapy programs have been

identified as effective approaches in the prevention of alcohol and other drug problems (Alvy, 1991; Hawkins, et al., 1992; McKay, 1991; Popkin, 1991). Although most of the research on such efforts has focused on the ability of these programs to reduce antisocial behavior problems (e.g. Fleischman, 1981; Patterson & Reid, 1973; Peed, Roberts, & Forehand, 1977) and to prevent or reduce juvenile delinquency (e.g. Alexander & Parsons, 1973; Klein, Alexander, & Parsons, 1977; Tremblay, McCord, Boileau, LeBlanc, Gagnon, Charlebois, & Larivee, 1990), the success of this approach in improving family management skills, reducing immediate problem behaviors, and preventing subsequent antisocial acts supports its continued use as an intervention program. However, it should also be noted that subjects in such studies are typically selected because of problem child behavior, rather than because of particular characteristics of the parents. Although little is known thus far about the extent to which parent training interventions are successful in preventing substance abuse among children with alcoholic parents, there is some direct evidence that parenting skills training with substance abusing parents is successful in reducing child behavior problems, improving parenting practices, and reducing children's interest in using alcohol and cigarettes (DeMarsh & Kumpfer, 1986). Similarly, a parent training intervention with parents of high-risk youth indicated a positive trend in the prevention of tobacco use among the target children (Dishion, Kavanaugh, & Reid, 1989).

Parent and Family Disrupters in the Treatment Of Child Antisocial Behavior

The role of marital conflict and parent psychopathology in disrupting child rearing practices and contributing to the developement of child antisocial behavior (e.g. Davies, et al., 1989; Emery & O'Leary, 1982; Johnson & Lobitz, 1974; Johnson & O'Leary, 1987; Lahey, et al., 1988) suggests that these family characteristics may also influence the success of interventions targeting parenting practices and child behavior. The following section reviews the small body of literature to date that has examined the effects of these potential disrupters on

family-based parent skills training interventions.

Marital conflict. As described above, several studies have found an association between marital conflict and parenting behavior (Gottman & Katz, 1989; Johnson & Lobitz, 1974; Jouriles & Farris, 1992; Kemper & Reichler, 1976). One explanation for this relationship has been offered by Emery (Emery, Hetherington, & Dilalla, 1984), who suggests that parenting is often compromised when interspousal conflict and marital dissatisfaction are high. From this perspective, marital conflict promotes inconsistencies in parenting, such that mothers and fathers may employ different practices with the same child, and each parent may him/herself respond in inconsistent ways from one time to the next. Such inconsistent parenting has been associated with negative child outcomes in a number of studies (Block, Block, & Gjerde, 1986; Block, Block, & Morrison, 1981; Chassin, et al., 1993; Emery, et al., 1984; Gottman & Katz, 1989; Hetherington, Cox, & Cox, 1981; Patterson, 1980).

While marital conflict has been found to affect daily child-rearing practices and child behavior, the extent to which this factor also disrupts the treatment of child antisocial behavior is less clear. Oltmanns and his colleagues (Oltmanns, Broderick, & O'Leary, 1977) found a negative correlation between marital adjustment and the initial severity of children's behavior problems among a clinic sample. However, pretreatment level of marital discord was not predictive of child behavior change either at termination or at a 5-month follow-up. In contrast, Dadds and his colleagues (Dadds, Sanders, Behrens, & James, 1987; Dadds, Schwartz, & Sanders, 1987) found that the extent of marital discord reported by parents of conduct-disordered children was related to parent-to-child behavior at a six-month follow-up, with greater marital discord associated with more impaired parenting. However, marital conflict was not related to immediate post-treatment measures of parenting behavior. Thus, marital discord impeded the later maintenance of treatment effects, even though it did not affect initial progress or gains.

In earlier research with the sample of families used in the present study, interspousal aggression and conflict were not significantly associated with child outcome either at mid-treatment or at the end of the intervention (Nye, 1992). Although it is possible that a post-treatment follow-up might have revealed such an effect, an alternative explanation is that the potential impact of marital conflict on child outcome was reduced through the intervention, as parents who completed the program were engaged in marital problem-solving work in addition to the child-focused component. In support of this explanation, other research has indicated that parent training interventions incorporating partner enhancement strategies are more effective both in changing deviant child behavior and in maintaining those effects than is parent training alone (e.g. Griest, Forehand, Rogers, Breiner, Furey, & Williams, 1982). In fact, in the Dadds studies (Dadds, et al., 1987a; 1987b), marital conflict was differentially predictive of child post-treatment outcome depending on the nature of the intervention. Distressed couples who received partner support training in addition to the child management component were as able to maintain treatment gains and positive parenting behaviors as were couples in nondiscordant marriages, whereas this effect was not found for distressed couples who received only child management training. Thus, marital conflict has not been found to significantly impair treatment success in programs that explicitly address marital difficulties within the intervention protocol.

Parent psychopathology. Although there is a paucity of research in this area, the literature also indicates that pretreatment levels of parent psychopathology are predictive of both treatment participation and outcome in parent training programs. Maternal depression, for example, has been associated with treatment attrition rates (McMahon, Forehand, Griest, & Wells, 1981b), and with parents' failure to participate in treatment outcome evaluations as follow-up (Griest, Forehand, & Wells, 1981). Similarly, Furey and Basili (1988) found higher levels of depression among mothers who dropped out of treatment than among those who continued with

the intervention protocol. Thus far, alcoholism has not been studied as a predictor of participation, although the literature frequently has indirectly linked this problem given the strong familial assortative relationships between alcoholic men and depressed women (cf. Merikangas, et al., 1985).

Regarding treatment outcome, Dumas and Wahler (1983) found that level of positive improvement in parenting practices at the end of treatment was impaired by higher levels of maternal psychopathology and marital violence, and by lower family socioeconomic status. A later study by Dumas (1986), however, suggests that the primary influence of parent psychopathology on treatment outcome may be through its association with low socioeconomic status. Similarly, Webster-Stratton (1985) found socioeconomic disadvantage to be highly predictive of more negative child outcomes in parent training for conduct-disordered children. Pretreatment depression among the mothers was a much weaker predictor, although it was strongly negatively related to socioeconomic status. Overall, then, the role that various types of parent difficulty play in reducing the ability of parent training programs to increase parenting skills and reduce child antisocial behavior has been unclear. The literature has focused largely on parent depression, with much less attention given to parent alcoholism. Further, participants in all of these studies were identified because of problem child behavior, rather than for characteristics of the parents. Thus, it is difficult to generalize findings from this research to our own sample of families, who were explicitly recruited for the intervention program because of paternal alcoholism.

The literature does indicate, however, that both child-rearing practices and child antisocial behavior are differentially impaired by parent depression, antisocial behavior, and alcoholism, and by family factors related to marital conflict and socioeconomic deprivation. Further, some of these factors have been found to reduce the effectiveness of parent training programs aimed

at changing child-rearing strategies, particularly in treatment protocols which do not address parent and family difficulties that extend beyond problem child behaviors. However, there is evidence that processes relating to the course of the intervention itself may account for or moderate the effects of parent and family characteristics on treatment outcome.

Treatment Investment and Treatment Outcome

Patterson and Chamberlain (1988) have proposed that parent and family trouble influences the extent to which parents commit to and cooperate in parent training programs. From this perspective, it is the variable of parent cooperation or compliance that is most directly related to treatment outcome, through its association with change in parenting practices. In fact, Patterson and his colleagues (e.g. Patterson, Chamberlain, & Reid, 1982) have demonstrated that higher levels of marital conflict and parent psychopathology and fewer family resources interfere with parent training by increasing client resistance to the treatment and disrupting the acquisition and application of appropriate child rearing practices.

Treatment investment has been a distinct focus of psychotherapy research (e.g. Nelson & Borkovec, 1989; Orlinsky, 1989), and compliance has long been considered requisite for positive change in behavioral and cognitive-behavioral approaches (Burns & Nolen-Hoeksema, 1991; Shelton & Levy, 1981). For example, in corroboration of other authors (e.g. Kirtner & Cartwright, 1958; Rice & Wagstaff, 1967; Saltzman, Luetgert, Roth, Creaser, & Howard, 1976), Gomes-Schwartz (1978) identified patient involvement with and engagement in therapy as the best predictor of outcome in individual psychotherapy. Yet, this treatment process dimension has rarely been considered in outcome research involving behavioral types of family interventions (Primakoff, Epstein, & Covi, 1986). As Primakoff and her colleagues (1986) point out, treatment outcome research that fails to examine treatment investment is likely to be influenced by "compliance bias" (Feinstein, 1979), whereby purported differences among various treatment

groups may be more related to the extent of patient compliance with the regimen than to the impact of the program itself. Thus far, only a few studies on family-based interventions have examined the influence of parent treatment compliance or investment on treatment outcome.

In their examination of factors affecting outcome in a parent training program for mentally retarded children, Clark and Baker (1982) found that pretreatment levels of family socioeconomic status, income, and maternal education were predictive of parent skill acquisition by the end of the program, with higher levels of these family resources predicting greater parent proficiency. However, family resources were not associated with the extent to which parents followed through with acquired skills at follow-up 14 months later. Rather, it was parents' application of and compliance with newly acquired skills during the course of treatment that predicted their continued proficiency over a year later. Thus, parents who were highly cooperative with the program and who complied with homework assignments during treatment were able to maintain treatment gains over time.

Earlier research with alcoholic families from the Michigan State University Multiple Risk Child Outreach Program examined the role of parent psychopathology, marital conflict, family socioeconomic deprivation, and maternal treatment investment in predicting child outcome (Nye, et al., in press). Because of colinearity among the various measures of parent pathology, the psychopathology variable used was a composite of lifetime alcohol problems, current and worst-ever depression, and antisocial behavior. For the same reason, investment was a composite of cooperation with homework between sessions, and engagement in and openness to the therapeutic work within treatment sessions. Initial stepwise regression analyses of pretreatment parent and family characteristics identified father psychopathology as a significant positive predictor of negative child behavior at a mid-treatment time point. However, maternal treatment investment accounted for a significant additional portion of the variance beyond that accounted for by

paternal distress. Similarly, although higher maternal psychopathology was predictive of less positive child behavior at both mid-treatment and the end of the program, maternal treatment investment was also a significant positive predictor. Further, analyses indicated that the influence of maternal psychopathology on child outcome was accounted for by the association between pretreatment maternal distress and subsequent treatment investment. In this regard, mothers with higher levels of personal trouble appeared to have greater difficulty cooperating with and engaging in the treatment regimen, which in turn impeded treatment progress (Nye, 1992). Finally, whereas both family resources (income, parent education, and socioeconomic status) and maternal treatment investment were negatively predictive of negative behavior at the end of the intervention, maternal treatment investment was found to moderate the deleterious impact of economic deprivation on treatment success. That is, families in which the mothers were highly invested in and cooperative with the program showed a reduction in negative child behavior regardless of their economic resources. In contrast, lack of family resources predicted greater negative child behavior at the end of the program among families in which the mother was not highly invested in the success of the regimen. Together, these findings indicate that treatment investment represents a more proximal determinant of treatment success and positive child outcome than is pretreatment level of parent psychopathology and family economic deprivation.

The above results are consistent with research by Patterson and Chamberlain (1988), who also used measures of both within-session resistance to therapists' instructions, and between-session noncompliance with homework assignments as markers of treatment investment among parents of preadolescent antisocial children. Their preliminary findings suggested that family stressors such as marital conflict, parent psychopathology, and low socioeconomic status indirectly impeded positive child outcome by increasing within-session conflict and decreasing treatment compliance. Subsequent analyses confirmed that social disadvantage, parent depression,

and parent antisociality influenced level of resistance in and cooperation with treatment (Patterson & Chamberlain, 1994). Further, these researchers found that decreased resistance during parent training was associated with improved discipline, problem solving, and monitoring practices by the parents (Patterson & Stoolmiller, in press).

These studies indicate, then, that positive change in targeted parent and child behavior arising through parent training interventions are more proximally accounted for by parent treatment investment, and more distally by parent psychopathology and family economic deprivation. Further, the research suggests that parent treatment investment may serve to promote treatment gains that might otherwise be impaired by parent and family difficulty. Clearly, then, a more detailed examination of treatment process characteristics, including parent treatment investment, is a necessary next step in determining more explicitly what factors contribute to successful outcomes in parent training approaches to prevent child antisocial behavior and substance abuse.

Predictors of Treatment Investment: Dropout Studies

Several studies have explored factors associated with families that prematurely disengage from parent training programs and/or discontinue their involvement with post-treatment evaluations. In their examination of pretreatment variables predicting participation in follow-up assessments in a program for mothers of noncompliant children, Griest and colleagues (Griest, et al., 1981) found that maternal depression, but not marital satisfaction, was negatively related to this measure of cooperation. Similarly, Griest and Forehand (1982) have associated parental depression with an increased dropout rate in parent training. Furey and Basili (1988) found that both depression and socioeconomic disadvantage were predictive of mothers who dropped out of such a program, and that these mothers also had more impaired parenting skills at the beginning of treatment than did mothers who completed the program. In addition, mothers who remained

in the program but did not perceive a positive improvement in their child's behavior had significantly higher levels of depression than mothers who were satisfied with the treatment. Other research has also identified low socioeconomic status, as well as less parent education, as predictors of early termination from parent training (Dumas & Albin, 1986; McAuley, 1982; McMahon, et al., 1981b). Again, families involved in these studies were all identified by way of their child's antisocial behavior.

Among alcoholic families involved in the Michigan State University Multiple Risk Child Outreach Program, no differences were found at baseline in level of child behavior problems, parent psychopathology, marital conflict, or family resources between parents who completed treatment and those who terminated prematurely (Nye, 1992). However, a few differences were noted between families that participated in treatment and/or assessments throughout the course of the study, and those who either refused to participate or became ineligible for the program because of divorce or relocation. Specifically, mothers in families that disengaged from the larger research project reported more extreme rates of certain types of marital violence, and higher current levels of maternal alcohol consumption. To some extent, then, the more dysfunctional families may have been selected out of the project, via marital separation and/or refusal to participate in follow-up assessments.

Interestingly, some research with alcoholics has indicated that patients with lower levels of depression at intake are not as likely to persist in treatment as are alcoholics who are more depressed (MacMurray, Nessman, Haviland, & Anderson, 1987). The authors propose that a certain level of distress is necessary in order for patients to be motivated to continue with treatment. In an extensive review of earlier research on treatment dropouts, Baekeland & Lundwall (1975) identified three clusters of characteristics associated with premature termination: 1) intrapsychic factors of the patient that either favorably or unfavorably dispose him/her to

psychological intervention; 2) factors related to the personality, style, and attitudes of the therapist; and, 3) environmental factors which may interfere with continued participation in treatment.

Although the treatment dropout literature represents an important step in identifying personal and interpersonal characteristics that are associated with treatment participation, dropout and refusal rates are only crude indices of treatment investment and compliance and are not necessarily indicative of the treatment process. There is growing evidence that clients who terminate treatment prematurely do not represent a homogeneous group (Baekeland & Lundwall, 1975; Fiester & Rudestam, 1975; Pekarik, 1992; Schwartz, 1991). For example, Pekarik (1992) found that some parents who had sought assistance in managing problem child behaviors terminated prematurely because of dissatisfaction with treatment or because of environmental obstacles impeding treatment attendance, while other parents terminated because the target child's behavior had improved. Thus, it is not feasible to assume that all drop-outs are less invested in treatment than are those who follow the designated timeline. Nor is it appropriate to conclude that those who terminate early are treatment "failures". In the Pekarik (1992) study, children whose parents terminated treatment prematurely because of problem improvement exhibited comparable treatment outcome to children whose parents continued in treatment. It is also faulty to assume that clients who remain in treatment will uniformly experience a positive outcome compared with treatment drop-outs. In fact, in earlier work with the current treatment sample, only highly invested mothers completing the parent training program were able to effect positive changes in their child's behavior at the end of treatment. In contrast, neither the less invested treatment completers nor the mothers who dropped out of the program experienced significant child behavior change (Nye, Zucker, & Fitzgerald, in press). Thus, although premature termination may be one index of level of treatment investment, this variable alone does not

provide an understanding of the processes that either foster or impair treatment success.

Predictors of Treatment Investment: Treatment Process Studies

Using a more process-related measure of investment, Dumas (1986) examined parent and family characteristics related to combined measures of treatment involvement and treatment outcome. Treatment outcome, as determined by positive change in parenting skills, and treatment involvement, as measured by attendance at scheduled meetings and compliance with program instructions, were most directly impaired by lower family socioeconomic characteristics. Maternal psychopathology and marital violence were more indirectly related to treatment involvement and outcome, through their association with characteristics of the socioeconomic setting.

Patterson and his colleagues have undertaken a series of studies on both within-session resistance to therapists' interventions and between-session noncompliance with homework assignments as measures of treatment investment. In general, the authors have reported a high rate of overt opposition to the therapist and low compliance with homework among parents with criminal and/or antisocial histories (Patterson & Chamberlain, 1992) and, to a somewhat lesser extent, by depressed parents (Chamberlain & Ray, 1988). Typical of most of the parent training research, these studies have focused on parents of antisocial or conduct-disordered children, with one recent study targeting a clinical sample of 70 preadolescent boys and girls who were referred for treatment because of extreme antisocial behavior problems (Patterson & Chamberlain, 1994). Most of the target children were boys, with a mean age of 9 years. Participants were economically disadvantaged, and less than half were two-parent families. Analyses indicated that both maternal pathology (depression, antisociality, and stress) and social disadvantage were associated with initial levels of mothers' resistance, but were not significantly related to maternal investment at the end of the intervention. In contrast, paternal antisociality, depression, and

social disadvantage were associated with resistance and reluctance throughout treatment (Patterson & Chamberlain, 1994). Thus, there is some suggestion that individual and social stressors may differentially influence mother and father investment in the course of treatment.

Research on the young alcoholic families in the Michigan State program (Nye, 1992) examined the extent to which pretreatment levels of child behavior problems, mother and father psychopathology, marital conflict, and family socioeconomic deprivation served as predictors of maternal treatment investment through mid-treatment and through termination. Only the maternal psychopathology cluster, comprised of current and worst-ever depression, antisocial history, and lifetime alcohol problems, was significantly associated with the extent to which mothers demonstrated investment in the treatment program at both time points. Additional work is necessary to examine differences in these relationships from pretreatment to mid-treatment in comparison with the mid-treatment to termination phase. In addition, father treatment investment needs to also be considered as a treatment process variable.

Other Treatment Process Characteristics

Based on the literature reviewed thus far, it is evident that the effectiveness of parent training and other family-focused interventions targeting aversive child behavior is strongly associated with the extent to which parents comply with homework assignments, are engaged and cooperative with the therapist, and are invested in the success of the protocol. Further, the importance of treatment investment to treatment success is maintained even when the influence of more distal parent and family characteristics, such as parent psychopathology, marital conflict, and family socioeconomic status, is taken into account. In addition, there is some evidence that treatment investment is not only a vehicle through which some of these other factors affect outcome, but also a potential buffer from the negative influence that family difficulty can have on treatment success.

Treatment investment, as reflected in parent openness to change and cooperation with assignments, is only one aspect of the treatment process that is likely to be associated with treatment outcome. Other characteristics, such as parents' expectations about a program and their satisfaction with its results during treatment, are likely to be related to both investment and outcome. Similarly, therapists' expectations about a family's ability to benefit from a treatment protocol may influence the course and ultimate success of the intervention. The remainder of this literature review describes research which has examined the influence of treatment expectations and satisfaction on investment and outcome.

Treatment satisfaction. The treatment process research identifies treatment satisfaction as another important treatment characteristic. McNeill and his colleagues (McNeill, May, & Lee, 1987) reported that their sample of college students who terminated treatment prematurely were less satisfied with the services they received and viewed their counselors more negatively than did subjects who terminated "successfully". Similarly, a subsample of parents in the Pekarik (1992) study who terminated their involvement in child-focused therapy did so because of dissatisfaction with treatment services. However, the relationship between treatment satisfaction and treatment investment is not perfect, at least when investment is operationalized as continuation in therapy. As noted above, several studies have found adequate levels of satisfaction among treatment drop-outs (e.g. Heineman & Yudin, 1974; Kline, Adrian, & Spevak, 1974; Pekarik, 1992). For example, in Heineman and Yudin's (1974) study, 50% of treatment drop-outs reported satisfaction, while Kline and colleagues (Kline, et. al., 1974) found a satisfaction rate of 59% among their group of drop-outs. This relatively high level of satisfaction among clients who drop-out of treatment provides further support for the use of measures of treatment investment that extend beyond mere attendance at sessions.

There is also some evidence that client satisfaction with treatment is associated with

expectations for continued improvement (Hansson & Berglund, 1987) which may, in turn, affect clients' investment in maintaining treatment gains. For example, Furey and Basili (1988) examined factors related to mothers' perceptions of improvement in their children's noncompliant behavior. Mothers who reported an improvement in their child's behavior from pretest to the two-month post-treatment follow-up were classified as satisfied with the intervention, while mothers who continued to report child maladjustment at follow-up were defined as dissatisfied. Observations of parent and child interactions indicated comparable levels of improvement in both child noncompliance and parenting behavior. Thus, despite objective improvements as a result of the intervention, "dissatisfied" mothers perceived a lack of positive change in child behavior at the two-month follow-up. This represented a deterioration from immediate end-of-treatment levels, as mothers in the dissatisfied group reported initial treatment gains from pretest to termination. An examination of pre-treatment levels of parental distress indicated that mothers in the dissatisfied group were significantly more depressed than those in the satisfied group, which may account for the deterioration in perceptions of improvement among dissatisfied mothers. The authors conclude that:

> many mothers do not maintain positive perceived gains in their child's adjustment after treatment despite continued maintenance of the parenting skills learned in therapy and in the child's observed behavior. The failure to establish enduring improvements in maternal perceptions creates the risk that the mothers will discontinue the behavioral management techniques which, in fact, have reduced deviant child behavior...Hence, more than the child's actual behavior influences a mother's perception of her child and, ultimately, continued compliance with treatment (pp. 562-563).

Although limited by its failure to obtain direct measures of satisfaction from the participants, this study highlights the potential influence that client perceptions of treatment gains may have on continued investment. However, an additional limitation of this study is its failure to consider levels of satisfaction during the course of treatment. Much of the research incorporating satisfaction measures has looked only at client satisfaction at termination (Furey &

Basili, 1988; Hansson & Berglund, 1987; Hobbs, Walle, & Hammersly, 1990). Such studies do not permit an examination of the influence of client satisfaction during treatment on subsequent treatment investment, treatment outcome, and expectations of continued treatment success. Clearly, such research is necessary in order to delineate the role of client satisfaction in enhancing or disrupting the treatment process.

The link between satisfaction and outcome is also unclear. Although Pekarik (1992) found poor outcomes for dissatisfied adult and child dropouts, ongoing adult clients who reported very high satisfaction ratings also reported low symptom improvement. Edwards and colleagues (Edwards, Yarvis, Mueller, & Langsley, 1978) found variations in client satisfaction throughout treatment among outpatient adults. The authors noted that satisfaction increased from the second visit to the last visit, but did not show such a trend from session two through follow-up. In addition, the relationship between satisfaction and outcome differed at these varying time points; client satisfaction was most poorly correlated with improvement at the second visit and most strongly associated with outcome at the last visit. Thus, level of satisfaction at one point in treatment may have different implications for outcome than at other time points.

Research conducted by Tracey (1989) indicates that treatment satisfaction may progress in a curvilinear trend from the beginning of treatment to the end. In this study, both clients and therapists reported high satisfaction early in treatment, lower satisfaction at mid-treatment, and a return to high satisfaction by termination. However, this trend was found only for clients who had experienced the most improvement by the end of treatment. In contrast, the less successful outcome groups demonstrated a greater level of continuity in client and therapist satisfaction over time. The author proposes that difficult issues are typically addressed during the middle sessions of successful interventions, thereby creating less client and therapist satisfaction with the process than during earlier and later stages. Under this formulation, stability in satisfaction during the

course of therapy may be a marker that critical issues are not being addressed, thereby impeding the ultimate success of the intervention.

Lebow (1982), in an extensive review of client satisfaction research, summarizes the literature in this way:

> The research suggests that satisfaction is closely related to...clients' global assessments of their success in treatment; low-to-moderately related to therapists' satisfaction with treatment, to clients' more specific view of change, and to the tendency to terminate prematurely; and only slightly related to therapists' assessments of change (p. 253).

Thus, multiple measures of satisfaction and outcome are necessary in order to understand the complex processes taking place in the context of treatment.

Treatment expectations. Baekeland and Lundwall's (1975) review of earlier research on premature disengagement from treatment identified a variety of client and therapist characteristics associated with this index of investment. Among these were the initial motivation of the patient to engage in treatment, therapist expectations of patient improvement, and discrepant treatment expectations between client and therapist. In terms of the latter, all 6 studies reviewed indicated that the match between patient and therapist expectations played an important role in continued participation in individual psychotherapy. Although not representing an extensive body of research, this early literature supports the role of treatment expectations in treatment investment, as measured by continuation in therapy. Other researchers (e.g. Kazdin, 1981; Wolf, 1978) have proposed that a client's early attitudes about a treatment program will be significantly associated with his/her investment in and cooperation with the intervention procedures. Similarly, Bandura (1977) has argued that initial expectations about the usefulness of treatment influence clients' motivation and investment, as well as their willingness to continue with treatment when faced with challenges or difficulties. Thus far, however, there have been few empirical investigations of the relationship between expectations and ongoing investment.

Regarding treatment success, a more substantial body of literature has identified a relationship between client expectations and outcome with a variety of patient populations. These studies indicate a positive relationship between favorable pretreatment expectancies and eventual change in the targeted problem (Bloch, Bond, Qualls, Yalom, & Zimmerman, 1976; Bowden, Schoenfeld, & Adams, 1980; Collins & Hyer, 1986; Duckro, 1991; Evans, Kiolet, & Smith, 1985; Evans, Smith, Halar, & Kiolet, 1985; Waas & Anderson, 1991; Wilkins, 1973). In one of the few studies focused on parent training interventions, Clark and Baker (1983) examined factors influencing parent proficiency in teaching skills and managing problem behaviors with their mentally retarded children. Parents who were less proficient in applying new skills at the end of the program scored higher on pretreatment expectations of obstacles to teaching their children than did the more proficient parents. Further, this difference in expectations was not associated with differences in pretest child characteristics between the two groups.

Elliott (1986) has suggested that a client's pretreatment evaluation of an intervention will directly influence his/her use of intervention procedures, thereby affecting treatment outcome, as well. Overall, the literature supports the proposed relationships between pretreatment expectations, ongoing treatment investment, and post-treatment outcome. However, the interrelationships among these three treatment variables has yet to be examined. In addition, the influence of the therapist on treatment process and treatment outcome characteristics needs to be examined more closely. As described earlier, studies of premature treatment termination have identified the therapist as an important agent in the treatment process. In particular, the level of agreement between client and therapist expectations has been found to predict whether or not clients remain in therapy (Baekeland & Lundwall, 1975). In addition, there is some evidence that the therapist's initial expectations about a client's potential to benefit from treatment influence the treatment process and subsequent treatment outcome (e.g. Duckro, 1991). Similarly, Hakan

(1990) proposes that therapist expectations at the outset of treatment affect client treatment investment and dropout rates.

Wilkins (1973) has argued that the early research relating client expectancy to outcome has been confounded by an exclusive reliance on patient self-reports of change, and proposes that therapist expectations may account for expectancy effects that have typically been attributed to clients. Some research has supported this position, and has identified therapists' expectations to be more predictive of client outcome than clients' own expectations for symptom reduction (Martin & Sterne, 1975). However, it must also be noted that this latter study was with a group of severely disturbed patients, whose expectations were measured immediately upon hospitalization. Such a patient sample might presumably have uniformly low expectations of their own prognosis, given their extreme circumstances.

What may perhaps be a more crucial argument made by Wilkins (1973) is his caveat against attributing a causal effect to client expectations, "when more directly observable operations leading to improvement can be identified". From this perspective, expectations of therapeutic gain are not in and of themselves sufficient for treatment to be successful. Rather, the processes involved in the treatment protocol must also be examined. In support of this, research on a group of inpatient substance abusers found that patients with the most successful outcomes were those whose expectations for success were initially low at intake, and who became increasingly more optimistic about their prognosis as treatment progressed (Burling, Reilly, Moltzen, & Ziff, 1989). Thus, the impact of initial client expectations on outcome, while potentially important, may not be direct. Rather, it is likely that expectations are modified as a function of the client's experiences in treatment.

Summary

The literature on substance abuse in adolescence and early adulthood has identified a variety of parent, family, and child characteristics that are thought to be early precursors to alcoholism. Regarding child characteristics, for example, early antisocial behavior has been associated with adolescent substance abuse (e.g. Robins, 1978; Johnston, et al., 1978; Kandel, et al., 1978; Wechsler & Thum, 1973), and both Loeber (1986) and Zucker and Fitzgerald (1991) have proposed developmental pathways linking child antisocial behavior with early initiation into drinking, problem drinking, and progressively more severe antisociality. Despite such continuity, however, there is also evidence that a substantial proportion of children who display severe behavior problems do not manifest these problems later on (Ghodsian, Fogelman, Lambert, & Tibbenham, 1980; Loeber & Dishion, 1983; Robins, 1978). Thus, early child antisocial behavior alone may not be an adequate marker of risk for later substance abuse. Such co-occurring characteristics as parent alcoholism, poor family management practices, and family conflict have also been identified as risk factors in the development of alcoholism. Further, there is evidence that parental alcoholism has a particularly strong influence on adolescent substance abuse, both via direct modeling (Chassin, et al., 1991; Kandel, 1982; Noll & Zucker, 1983) and through its association with disrupted parenting (Chassin, et al., 1993; Davies, et al., 1989), family conflict (Reider, et al., 1989), and child antisocial behavior (Fitzgerald, et al., 1989).

Given the confluence of these early risk factors in alcoholic families, it is appropriate to target this population with intervention efforts designed to minimize the risks and prevent the subsequent development of alcoholism among the offspring of alcoholic parents. Although little research to date has examined the longer-term impact of family-based prevention approaches on youth substance use, parent skills training and family therapy programs have been found to be effective in improving the poor parenting practices and negative child behavior thought to place

youth at risk for later problems with alcohol (e.g. Fleischman, 1981; Patterson & Reid, 1972). Yet, these efforts have typically focused on antisocial children as the targeted high-risk group, at the exclusion of particular parent and family characteristics. An alternative strategy is to identify children whose early rearing environments expose them to a greater density of risk, and who may therefore be most susceptible to the development of substance abuse problems later on. This latter strategy may be particularly important given evidence that at least one form of alcoholism, antisocial alcoholism, evolves from early childhood and involves a progressive cumulation of risk that results in early and severe abuse of alcohol and other substances (Zucker, in press). Further, the high prevalence of antisocial behavior and alcoholism in sons of alcoholic fathers, and the unique contributions of paternal alcoholism and antisociality to adolescent alcohol use and externalizing symptoms, respectively, suggests that young sons of antisocial alcoholic fathers are exposed to a density of risk much greater than is otherwise found in the general population.

The present study focuses on a community-based effort to target such a high-risk sample. The Michigan State University Multiple Risk Child Outreach Program (Maguin, et al., 1994; Nye, et al., in press; Zucker, et al., 1986; Zucker, et al., 1990) utilized an outreach protocol to contact and treat a group of intact families with an alcoholic father and at least one preschool-age male target child. This sample was expected to be particularly dense in child risk for later alcohol and drug problems, by virtue of a high rate of antisociality and multiple parent and family stressors (Zucker, et al., 1988). Given the support for family-based, parent skills training programs both in the treatment of antisocial child behavior (Dumas, 1989; Gard & Berry, 1986; Kazdin, 1985, 1987; Patterson & Chamberlain, 1992) and in the prevention of substance abuse (Hawkins, et al., 1992), the current program was designed to reduce the onset and/or progression of antisocial behavior problems among these preschool-age sons of alcoholic fathers, by

modifying child management practices used by the parents. In addition, the program sought to improve marital communication and conflict-resolution skills, and to begin to address problems with alcohol abuse within the family. The longer-term goal, then, is the prevention of alcoholism among the male target children, by addressing these multiple risk factors early on.

In terms of the first goal, that of addressing child behavior problems, a decrease in antisocial behavior and an increase in prosocial behavior in the target children at the end of treatment has already been observed; however, improvement in negative behavior was found to have eroded by the six-month follow-up (Maguin, et al., 1994). Subsequent research (Nye, 1992; Nye, et al., 1993) identified variations in the extent to which families benefitted from the intervention. In corroboration of other parent training programs which included a marital enhancement component (Dadds, et al., 1987a, 1987b; Griest, et al., 1982), pretreatment level of marital discord was not associated with child outcome. Also consistent with the literature described thus far (e.g. Dumas, 1986; Dumas & Wahler, 1983; Webster-Stratton, 1985), higher levels of parent psychopathology and greater economic deprivation were associated with fewer treatment gains among these families. However, it was also noted that maternal treatment investment, as measured by compliance with homework assignments and cooperation with therapeutic interventions, was a significant predictor of child outcome, with children of more highly invested mothers showing greater behavioral improvement. Further, it was determined that maternal investment mediated the influence of maternal psychopathology on child behavior, and moderated the deleterious effects of economic deprivation on child outcome.

Overall, then, research conducted thus far with families from the M.S.U. program is consistent with other studies (e.g. Patterson & Chamberlain, 1992) which have identified treatment investment as a predictor of treatment outcome. However, other treatment process characteristics and treatment outcome measures need to be taken into account. For example, the

Patterson group has emphasized the importance of using multiple measures of child outcome, of measuring change in parenting behavior as well as change in child behavior, and of including measures of paternal treatment investment (e.g. Patterson & Chamberlain, 1992). In addition, the literature reviewed thus far indicates that client and therapist self-report ratings of expectations and satisfaction may be associated with treatment investment and treatment outcome. As a pretreatment variable, patient and therapist expectations are thought to influence initial levels of client engagement (Bandura, 1977; Kazdin, 1981; Wolf, 1978), as well as therapists' attitudes toward and/or experience of clients (Duckro, 1991). In addition, initial expectations have been associated with eventual outcome in parent training interventions (Clark & Baker, 1983), alcoholism treatment (Burling, et al., 1989), and other treatment approaches (e.g. Bloch, et al., 1976; Evans, et al., 1985; Waas & Anderson, 1991).

As a process variable, the role of expectations remains largely unknown. Most of the literature reviewed did not examine changes in expectations during the course of treatment, or the interplay between expectations, investment, and improvement as treatment progresses. The one exception to this is a study of self-efficacy among inpatient substance abusers (Burling, et al., 1989), which found an association between low expectations at intake, increasing self-efficacy during treatment, and more positive outcome at the end of treatment. Clearly, this is an important area for further inquiry.

Regarding treatment satisfaction, the findings are even more disparate. As a characteristic presumably arising out of the client and therapist's experience of the treatment process, satisfaction may have important implications for subsequent treatment investment, expectations, and outcome. Although the research thus far has not examined this possible interplay, the study by Tracey (1989) provides some preliminary support. In this regard, a curvilinear trend in satisfaction was found for both clients and therapists in cases with more

successful outcomes. This trend was characterized by high satisfaction at the beginning of treatment, a drop in satisfaction at mid-treatment, and a return to high satisfaction by termination. The author proposes that the drop in satisfaction at mid-treatment is related to a delving into more difficult issues, a phase that is a typical mid-treatment process in successful interventions.

Statement of the Problem

Research on alcoholism has identified various risk factors occurring relatively early in a child's life that appear to be precursive to the development of alcohol problems and antisociality later on. Among these, poor parenting practices, child antisocial behavior, and marital conflict have all been implicated (Hawkins, et al., 1992). In addition, parental alcoholism has been linked to youth alcohol abuse both through an association with these other risk factors, as well as via genetic and modeling influences. A risk-focused approach, designed to extinguish or ameliorate these precursors to alcoholism, has been advocated, with family-based, parent skills training interventions promoted as one means of addressing some of these risk factors (Hawkins, et al., 1992; Zucker & Noll, 1987).

Similar to the delineation of risk factors in the alcoholism literature, treatment outcome research has begun to move away from global measures of treatment effectiveness, toward an examination of factors associated with better or worse outcomes at termination. Regarding cognitive-behavioral interventions in general, and parent training programs in particular, this literature has focused largely on pretreatment client characteristics that are predictive of outcome. While moderately informative, this approach overlooks the influence that characteristics of the treatment process itself have on treatment success. Characteristics such as treatment expectations, satisfaction, and investment are likely to have important implications for treatment outcome. To the extent that any of these treatment-related characteristics have been examined thus far, they have typically been looked at in isolation from one another.

The goal of the present study is to examine the interrelationships among parent and therapist expectations and satisfaction, parent investment, and treatment outcome in a prevention program designed to reduce familial and child characteristics associated with the development of alcoholism. Given the anticipation that there will be multiple pathways of influence affecting ultimate treatment outcome, a multiple influence model is proposed (Figure 1). This conceptual model, presented in simplified form, proposes a chain of influence among parent and therapist expectations, parent treatment investment, parent and therapist satisfaction, and treatment outcome as measured by changes in both parenting behavior and child behavior. Both client and therapist expectations are anticipated to affect treatment outcome indirectly, through an association with treatment process characteristics. In particular, it is expected that ongoing parent treatment investment will mediate the hypothesized relationship between initial expectations and treatment outcome. In addition, it is hypothesized that expectation and satisfaction ratings at mid-treatment may have important implications for subsequent investment and outcome.

The model also proposes that pretreatment levels of parent psychopathology, family economic resources, child behavior, and parenting style will be associated with treatment process and outcome characteristics. Higher levels of parent psychopathology and greater socioeconomic disadvantage are expected to be associated with more negative expectations about the treatment protocol for both parents and therapists. Further, it is anticipated that level of child behavior problems at pretest will be associated with parents' initial expectations about the treatment program, with more problematic child behavior associated with more negative pretreatment expectations. This latter hypothesis is based on an expectation that parents will perceive the intervention as being focused primarily on changing child behavior. In contrast, therapists may be more likely to focus on pretreatment parenting characteristics in anticipating families' potential success in the intervention. Therefore, therapists' expectations about the potential success of the

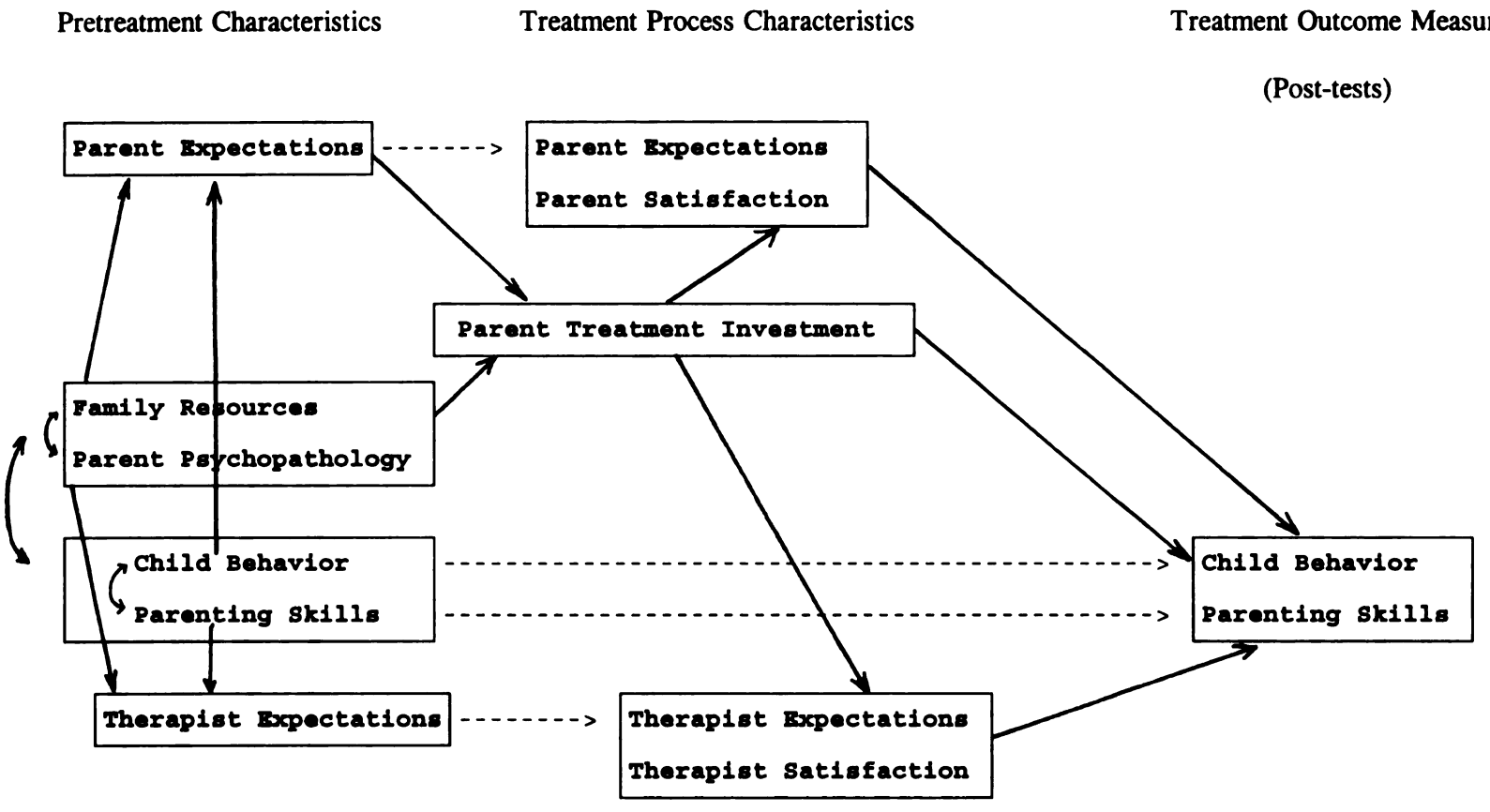


Figure 1. Proposed treatment process model (simplified) regarding the interplay between pretreatment and treatment process characteristics in predicting treatment outcomes.

program are anticipated to be related to their initial impressions of the parents, with more impaired parenting associated with more negative expectations on the part of the therapist.

Also of interest in the present study is the influence of parent psychopathology and family resources on early levels of child behavior and parenting practices, as well as with pretreatment expectations and subsequent outcome. In particular, higher levels of psychopathology and fewer family resources are anticipated to be associated with higher levels of negative child behavior, lower levels of positive child behavior, more impaired parenting skills, and lower expectations for success in the program at pretreatment. Regarding outcome, changes in child and parenting behavior are predicted to be most strongly tied to treatment process factors, with less direct influence by these parent and family characteristics. Thus, treatment process characteristics are anticipated to make a unique contribution to the prediction of treatment outcome, with pretreatment parent and family characteristics controlled.

Hypotheses

Hypothesis 1. Higher pretreatment levels of parent psychopathology and fewer pretreatment family socioeconomic resources will be associated with a) more problematic child behavior, b) more impaired parenting, and c) more negative treatment process characteristics over time.

Hypothesis 2. Lower parent and therapist treatment expectations at pretreatment will be associated with a) more problematic child, parent, and family functioning at baseline, and b) lower parent investment during Phase 1 of the intervention.

Hypothesis 3. Parent and therapist satisfaction ratings (including expectations for future change) at mid-treatment and termination will be positively associated with level of prior treatment investment as well as subsequent investment (i.e. from mid-treatment to termination).

Hypothesis 4. Parent and therapist satisfaction at mid-treatment and end-of-treatment time

points will also be positively associated with a) change in child behavior and b) change in parenting style at the same time points.

Hypothesis 5. Changes in a) child behavior and b) parenting style at mid-treatment and termination will be positively associated with prior treatment investment at the same time points.

Hypothesis 6. Treatment process characteristics (expectations, satisfaction, and investment) will be positively predictive of improvement in child and parenting behaviors at termination. Further, this association will be maintained when pretreatment parent, child, and family characteristics are controlled.

CHAPTER II

METHODS

Participants

Participants were 29 intact families who completed the Michigan State University Multiple Risk Child Outreach Program (Maguin, et al., 1994; Zucker & Noll, 1987, Zucker, et. al, 1985), a program designed to reduce conduct problems by way of consistent monitoring and discipline, and the reinforcement of prosocial behavior. The more long-term goal was to reduce the rate of conduct disorder and aggression among the children, with the hope of also reducing later delinquency, antisocial behavior, and substance abuse. In addition, the intervention was designed to improve marital problem-solving strategies and to begin to address alcohol abuse within these families.

The target group was comprised of young male children who are known to be at elevated risk for the development of conduct disorder because of their membership in families with an alcoholic father. A total of 104 families were recruited for potential inclusion in the treatment design (including a no-treatment control group). These families were recruited primarily from local district court records of drunk driving arrests, although a small minority of alcoholic fathers were not identified through the court system, but were uncovered during canvassing efforts to locate matched community control families for the larger parent project ($\underline{n}=10$ in the larger sample, $\underline{n}=4$ for the current sample). The latter families were included in the program provided that these fathers also had a history of DWI conviction during the lifetime of the target child.

The fathers identified for the current study were all apprehended for DWI with a blood alcohol level (BAL) of at least .15%. Court-identified families who gave permission to have their names released to our project personnel were visited for an initial screening for suitability. A BAL of .15% in itself suggests that these men had developed tolerance, but additional drinking-

related information was gathered from these fathers in order to ensure that they met the Feighner (Feighner, et.al, 1972) diagnostic criteria for probable or definite alcoholism. The measures of drinking behavior used for this screening will be described in more detail further on.

In addition to meeting alcohol-specific criteria, families in this sample all had a male child between the ages of 3-0 and 6-0, and this child and his biological mother were living in the home at the time of recruitment. Finally, only Caucasian families were contacted, given the very low incidence of ethnic minorities in this recruitment population, and because of the known variation of alcohol and other problems with ethnicity. Thus, to include such heterogeneity without being able to evaluate it was deemed less useful than to eliminate this source of variability.

Although all of the fathers met criteria for a diagnosis of alcoholism, few self-identified as alcoholic. Thus, the father's alcoholism was typically not made explicit at the outset of the intervention, but commonly arose during the work with the family. It should also be noted that 52% of the men in the current sample may be classified as antisocial, early onset alcoholics using Zucker's (1987) typology. Therefore, the group of alcoholic men recruited through the outreach protocol is more representative of the subset of alcoholics who are known to be the most damaged, with the most antisocial comorbidity, the earliest onset of alcohol dependence, and with the greatest likelihood that substance abuse will develop among their offspring (Zucker & Fitzgerald, 1991).

All families in the study received a fee for taking part.

Sample characteristics. A total of 104 families were initially assigned to an intervention or a control group. The intervention protocol involved two formats: (1) a Mother-Only condition, in which only the mother (as the primary caretaker) participated in the training program, and (2) a Both Parents format which involved both mothers and fathers in the intervention. These two treatment conditions were incorporated in order to examine potential differences in child outcome

related to the observation that fathers are commonly less involved in managing child misbehavior in conduct disordered families. Other research on this sample (Maguin, 1991; Zucker, et. al., 1989) has already found the random assignment of these families to be successful, in that no initial differences in levels of parent psychopathology, family socioeconomic status, or child behavior problems were found among the families in the Mother Only, Both Parents, and Control conditions. Initial comparisons of outcome between the two treatment conditions indicated that families in which both parents participated experienced greater success in increasing their son's prosocial behaviors than did families in which only the mother participated (Maguin, et al., 1994). However, subsequent analyses determined that maternal treatment investment, but not treatment condition, differentially accounted for variation in treatment outcome (Nye, et al., in press).

At the time of the initial screening evaluation, treatment families were randomly assigned to one of the two intervention formats, and were then invited to participate in a program "to improve parent-child communication patterns". Of the 69 families initially assigned to one of the intervention formats, 17 families become ineligible to receive or to continue with the program. Intervention families remained eligible for continued participation provided that they remained intact and lived within a 30 mile radius of the university office. The "intactness" stipulation was based on an expectation that marital dissolution might significantly alter the homogeneity of the sample and would potentially confound an examination of within-group trends and across-group comparisons. This stipulation was particularly crucial for families in the Both Parents condition, as it was deemed necessary that these parents both be actively involved in parenting the target child. Nine of these ineligible families separated before the intervention was offered, 4 separated during the intervention, and 4 became ineligible because they moved from the area.

Among the remaining 52 still eligible for the intervention, 7 refused to participate in the

program, and 16 families prematurely terminated their involvement in the intervention protocol. Thus, the 29 families on which this study is based are all of the families who remained intact during the time the treatment was being offered (i.e. for about one year) and who also completed the entire intervention program ($\underline{n}=16$ for Mother Only and $\underline{n}=13$ for Both Parents conditions).

Intervention Procedures

The intervention program was a modification of the Social Learning Therapy protocol developed at the Oregon Social Learning Center to modify antisocial behavior in socially aggressive children (Patterson, Reid, Jones, & Conger, 1975). This approach has been effective in reducing problem behaviors among antisocial and conduct-disordered children (e.g. Kazdin, 1987; Patterson, Chamberlain, & Reid, 1982). Further, this type of intervention has been identified as potentially useful in preventing substance abuse by targeting child antisocial behavior and poor parenting practices, both of which are associated with later problems with alcohol (Hawkins, et al., 1992; Zucker & Noll, 1987). This intervention program differs from other parent training approaches (e.g. Dumas & Wahler, 1983; Webster-Stratton, 1984) in regard to its scope and underlying orientation. Because marital conflict has been identified as a precursor to substance abuse problems (e.g. Baumrind, 1983; Penning & Barnes, 1982), a disrupter of parenting (e.g. Gottman & Katz, 1989), and an impediment to success in parent training programs (e.g. Dadds, Schwartz, & Sanders, 1987), the protocol used here incorporated a marital problem-solving component in the treatment regimen, rather than adhering to a strict child-focused paradigm. Family conflict and marital dissatisfaction were frequently encountered during sessions conducted with our sample, and often arose in relation to the fathers' excessive drinking. As a result, specific attention was routinely paid to parents' alcohol and drug problems and marital functioning as part of the intervention.

This program was explicitly designed as an alcoholism prevention program for children

in high-risk circumstances. Therefore, in contrast with OSLC interventions, target families in this study were recruited not because of identified child behavior problems, but because of the multiple risk factors associated with growing up with an alcoholic parent. Thus, the present version was identified more as education than therapy, and was offered through outreach efforts targeting a high-risk community population of families in which the target child had typically not yet come to public attention for his disruptive behavior. The children in our study were also significantly younger (mean age of 4.4 years) at the beginning of treatment than those children involved in OSLC's programs. Because these families were recruited via an outreach protocol targeting a designated high-risk population, the program was not presented as an offer of treatment, but as an educational program designed to enhance parent-child communication and improve parent-child relationships. Therefore, the work necessarily focused on ways to enhance parenting techniques and child-rearing practices in order to prevent later child behavior problems. Further, because parents were neither self-selected nor court-referred, some needed to be convinced of the usefulness of the program.

The intervention was designed to be a ten-month-long interaction of approximately 28 sessions with each family, and proceeded in two phases. Phase 1 focused on the introduction and application of child management skills through weekly sessions with families and two between-session telephone contacts. Phase 1 ended when the family had successfully acquired these skills, and/or when 12 to 16 sessions had been completed (approximately four months into the protocol). During Phase 2, biweekly sessions and weekly telephone contacts were conducted to support and reinforce the child management techniques while beginning to more specifically address significant marital and other family issues. Although the physical setting identified for the intervention was the Clinical Center at the university, about 45% of the families received some or all of the intervention program in their homes. The treatment staff was comprised primarily

of post-masters level doctoral graduate students in clinical psychology, as well as two masters level social workers. All therapists received 20 hours of training related to the treatment protocol before beginning the work, and four hours of weekly group supervision with one of two fully licensed clinical psychologists (RAZ and RBN). In addition to monitoring the adequacy of program implementation, supervision routinely focused on issues of therapist countertransference and other treatment process issues, as these might impede successful application of the regimen. Within the current sample of families, eleven therapists are represented.

Although the intricate details of this program are best described elsewhere (Zucker, Noll, Cruise, Kriegler, Wehner & Mitchell, 1985) a brief overview of the procedures is provided here.

Baseline data collection and initial interview. The program was initiated with the collection of baseline data on the target child's behavior. The initial intervention interview was then conducted with the parent(s) and the target child, and was designed to 1) establish a relationship between the therapist and the family, 2) engage the parent(s) in observations of the child's behavior (pinpointing and tracking), and 3) schedule times for the therapist to contact the parent(s) during subsequent weeks. Participating parents were given the assignment of observing the target child's behavior for one hour per day. This tracking was done by each parent who was involved in the intervention program, and "minding" and "not minding" behaviors were pinpointed as the focus of these observations. These behaviors were tracked, labeled for the child, and recorded by the parent(s). During the subsequent week, the therapist contacted the parent(s) by phone to discuss the incidence of "minds/not minds" and to address whatever issues needed to be addressed.

Tracking and initial point contract sessions. In the next session(s), the therapist further taught the parent(s) how to attend to/observe the child's behaviors. For each tracking segment, a particular problem behavior and its prosocial opposite were observed and counted. Phone

contacts were maintained between the therapist and the parent(s). In subsequent sessions, the therapist introduced and described point contracts to the parent(s). The contract is central to social learning treatment, and was used to teach family members to negotiate agreements among themselves. The first contract was the point contract or star chart, and focused on the positive aspects of the target child's behavior. This contract included one or two chores for the child to do and one or two child behaviors that the parent(s) would like to see increased. Once prosocial behaviors and chores were selected and identified, point values were assigned to each and a menu of potential rewards was generated, with a criterion set for obtaining each reward. At the end of each day, the parent(s) reviewed with the child the points that he earned and/or forfeited . Daily and weekly rewards were delivered, with appropriate social reinforcement. With the star chart, the focus was on "catching the child being good", and stars were administered as token reinforcement for positive behaviors. Rewards were given after a specified number of stars had been earned by the child. Again, the therapist called the families between sessions to determine progress and identify and deal with problems.

Time Out sessions and the familiarization home visit. Once the star chart or point contract had been successfully implemented in the home, the therapist discussed discipline practices and philosophies with the parent(s), including what forms of discipline the families had been most comfortable and satisfied with. Then the "Time Out" procedure was introduced, and the parent(s) viewed the "Time Out!" film (Northwest Family and School Consultants, 1981) before continuing with this topic in the next session. In session "B", the therapist reviewed and ran through the Time Out procedures, discussing definition, implementation, and the specific steps necessary to carry the procedure out. After thorough discussion and explanation, the therapist typically asked the parent(s) to practice Time Out with the child and to clearly explain the process to him before the procedure was actually put to use. The therapist then scheduled

a time to visit the entire family at home in order to examine the designated Time Out space, to get a sense of the physical environment in which the family operates, and to provide the family with the opportunity to welcome the therapist into the home. Phone contacts between the therapist and parent(s) were also maintained.

Problem solving. The next stage involved the introduction and practice of communication skills involved in effective problem solving. The three basic components -- active listening, generating new alternatives, and evaluating techniques -- were taught over the course of several sessions. As with the other aspects of the program, presentation of material was accompanied by practice within the session and by homework assignments to be carried out between sessions. Although the specific procedures during the problem solving session varied somewhat depending upon whether both parents were present or only the mother was involved, the basic components and strategies were the same in both conditions. The goal was to introduce problem solving skills that would assist the family in maintaining the skills that had already been taught in earlier intervention sessions, by improving the communication and conflict-resolution abilities of the family members. Given the young age of the children, the problems most commonly dealt with in this segment of the program were marital rather than being more broadly family-focused. As always, between-session phone contacts were made so that the therapist could discuss progress and problems with the parent(s).

Other help needs and end phase (termination) work. Because families with an alcoholic parent tend to have multiple problems and difficulties, the parent(s) often brought up family problems that did not directly involve the target child. The therapist was prepared to attend to and acknowledge these difficulties, and to engage in interventions that would be helpful to the family. At the same time, the therapist worked to keep the desired continuity of the intervention program's regimen. However, the pace at which a family progressed through the program may

have been slowed because of other family difficulties. Further, not all family problems were expected to be solved at the end of the planned 28 week intervention. Therefore, additional referrals for further assistance may have been necessary at the end of the intervention, in order to help these families deal with life issues other than those involving the child(ren).

Data Collection Procedures

Each family involved in the study completed a standard battery of questionnaires and participated in a variety of interviews and direct observation sessions (Zucker, Noll, & Fitzgerald, 1986; Zucker, et. al., 1985). Data were collected during the course of an eight session contact schedule, as well as during the intervention program. The data used in the present study were collected as close to the onset of the intervention phase as possible, and at mid-treatment and end-of-treatment time points. Additional follow-up data were collected from the parents six months subsequent to the termination of treatment. The first set of post-test instruments was collected in the fifth month of the program, after the families had begun meeting with the therapist on a bi-weekly basis. These data were collected in the family's home, by a trained team comprised primarily of graduate students. Measures related to aspects of the intervention work and to observed child and parent functioning were completed by the therapist assigned to each family. These therapist ratings were completed immediately after each intervention session or other family contact, as well as at the scheduled post-test intervals.

Measures

The measures that are of relevance for this research assessed parents' perceptions of their child's behavior problems, as well as levels of drinking, antisocial behavior, and depression in the parents. Measures of family sociodemographic characteristics were also included. Information about parents' expectations about the treatment program and their satisfaction with various aspects of the intervention was collected, and therapists were also asked to rate their own

expectations of the potential success of the program, and their satisfaction with how the family was progressing during treatment. In addition, therapist ratings of child behavior, parenting style, and parent cooperation/investment throughout the intervention were collected. Finally, independent observations of parenting behavior were conducted prior to treatment, as a more objective measure of initial parent functioning against which to validate therapists' ratings.

Pretreatment Measures: Parent Psychopathology

Drinking measures. Several instruments assessing alcohol and drug involvement were administered individually to the parents in the study. Information provided by these measures includes current alcohol use, alcohol-related problems, and drinking history. Parents completed a detailed Drinking and Drug History (Zucker & Noll, 1980b), the Short Form of the Michigan Alcoholism Screening Test ([SMAST]; Selzer, 1975), and were interviewed about their drinking practices as part of the Diagnostic Interview Schedule ([DIS]; Robins, Helzer, Croughan, & Ratcliff, 1980). The present work focused on information regarding the variety and duration of reported drinking problems, and the age at which the respondent reports having gotten drunk for the first time. These data were used to compute the Lifetime Alcohol Problems Score ([LAPS]; Zucker, 1991), an index of the extent of alcoholic involvement and problems over the individual's life course. The component subscores have been standardized within our project sample, and validity studies have shown LAPS to be an adequate index of the extent of alcohol-related impairment (Zucker, 1991). In the present study, this score was chosen as an indicator of parents' lifetime alcohol-related trouble prior to treatment. A measure of current alcohol consumption was not included in the present work because of evidence (e.g. Nye, 1992; Reider, 1991; Reider, et. al., 1989) that current alcohol use is of limited predictive validity among these families, primarily because of a different pattern of relationships with LAPS and antisociality (ASB) for fathers than for mothers ($r = -.27$ and $r = -.03$ respectively for fathers, and $r = .41$ and

r=.40 for mothers). A likely explanation for this discrepancy is that all of the men in the study were arrested for DUI prior to initial data collection. Thereafter, many of them quit drinking, thus making reported current alcohol consumption an inaccurate indicator of trouble with alcohol.

Depression. Current parental depression was measured with the Short Form of the Beck Depression Inventory ([BDI]; Beck & Beck, 1972), which contains 13 groups of statements addressing various areas of functioning that are often affected by depression. Scores on this short form correlate between .89 and .97 with the long form, and the psychometric durability of this measure is well-documented (Beck, Steer, & Garbin, 1988). Level of Worst Ever Depression (Zucker & Fitzgerald, 1992) was generated from the Diagnostic Interview Schedule, via the Hamilton Rating Scale for Depression (Hamilton, 1960). The interviewer uses this scale to generate an index of the time in the individual's life when s/he was most depressed. Both the Beck and Hamilton Worst Ever Depression scores were used as other indices of trouble among the parents in this sample.

Antisocial behavior. Parental antisocial behavior was measured with the Antisocial Behavior Checklist (Zucker & Noll, 1980a). This instrument explores the occurrence of antisocial behaviors in the respondent's childhood, adolescence, and adulthood, in relation to nine different content areas (e.g. trouble with the law, job-related antisocial behavior). Parents were asked to indicate the frequency of their participation in various antisocial behaviors. Psychometric properties of the instrument have been found to be sufficient, as test-retest reliability is strong (.91 over four weeks) and internal reliability is high (coefficient a= .93) (Zucker & Noll, 1980c).

Parent psychopathology index. In the present work, lifetime and current levels of parent symptomatology were not analyzed separately due, in part, to the limited utility of using the current alcohol consumption measure with this particular sample of families, as well as the

observation of high intercorrelations among the lifetime measures and the BECK index of current depression. In fact, all of the parent psychopathology indices have been found to be sufficiently intercorrelated as to warrant combining them into general mother and father psychopathology scores (e.g. Nye, et al., in press). Therefore, the present study used a composite score for parent trouble made up of LAPS, ASB, HAMW, and BECK (see Appendix A). This is consistent with other research from the parent project (Cruise, 1991; Reider, 1991) which identified a composite measure of parent psychopathology to be a better summary index of parent functioning than were each of the individual measures.

Pretreatment Characteristics: Family Resources

Sociodemographic variables. Parent and family sociodemographic variables related to parent education and income, and family socioeconomic status were also included in analyses. Earlier research with this group of families (Nye, 1992) identified a composite measure of family resources that was influential in predicting eventual child outcome. This Family Resources cluster, comprised of mother and father education and income, and family socioeconomic status (as measured by the Duncan TSEI2 index (Stevens & Featherman, 1980)), will be used in the current work, as well. Family SES was computed as the average of both mothers and fathers' occupational status when both parents were employed, and on the occupation of the employed parent when only one parent was working outside of the home. When neither parent was employed, family SES was assigned a standard score below the lowest occupational code on the scale. Correlations among the variables in the Family Resources clusters are listed in Appendix B. Parent psychopathology and family demographic characteristics of the treatment sample are presented in Appendix C.

Pretreatment Characteristics: Child Behavior and Parenting

Child behavior. The Child Behavior Rating Scale -- Preschool Version (CBRS) (Noll &

Zucker, 1985; adapted from Hopps, 1985) is designed to measure both prosocial behaviors (49 items) and undesirable, coercive behaviors (35 items) typical of preschool children. Items are rated on a 7-point Likert-type scale, ranging from "Never" to "Always". Mothers and fathers completed independent ratings of child behavior during one of the pretreatment data collection visits. The therapist also completed the rating scale, based on his/her observations of the target child's behavior during the initial contact(s) with the family. From these ratings are generated two scores reflecting current child behavior: Positive Behavior is the average frequency of all prosocial behaviors reported, and Negative Behavior is the mean rate of undesirable/antisocial behaviors. Adequate test-retest reliability has been established, and the measures correlate substantially with external validity indicators (Nye, 1992; Maguin, et al., 1994).

The CBRS was also completed by both parents at the mid-treatment (Post-test 1), termination (Post-test 2), and follow-up (Post-test 3) data collection visits. In addition, therapist reports on child behavior are available for the mid-treatment and termination time points. This longitudinal data on child behavior will be used as one of the treatment outcome measures (see below).

Parenting. The Observer Impressions Inventory, used extensively by the OSLC group, is a measure for reporting various aspects of observed interactions between parents and the target child. These observations were made and rated by the therapist after her/his first contact with the family. Included in this measure are 5-point ratings of discrete observed parent-child interactions, as well as more global ratings of parents' disciplinary style (ranging from "doesn't fit the parent at all" to "fits the parent perfectly) and general manner of interacting with the target child. These more global ratings include the extent to which mothers and fathers appear to act in overly strict, overly permissive, erratic, and/or consistent ways with the target child. Global, rather than discrete, parenting behaviors were used in analyses because of evidence that global

parenting style moderates the influence of specific parenting practices on child functioning (Darling & Steinberg, 1993), and because of concern that ratings of discrete behaviors might be more situation or context-specific. A principal components analysis of the global parenting items identified four factors characterizing parenting style in relation to the target child. The primary factor identified consisted of 14 items and accounted for 40% of the variance. The other factors accounted for an additional 26% of the variance. The items loading on this factor were commensurate with what might be characterized as non-coercive or authoritative parenting, and included such positive indicators as "Is a positive and reinforcing parent", "Treats target child with respect", and "Is consistent, even-handed, firm when necessary". Items loading in a negative direction on this factor included "Is overly permissive, laissez-faire, negligent", "Uses nagging or nattering to get compliance", and "Expresses anger/hostility while disciplining". The 14 items on this factor were combined into an averaged composite score representing level of "Authoritative Parenting". Reliability for this scale was determined to be adequate (coefficient $a=.90$). These items, and their factor loadings, are presented in Appendix D.

Because therapists were the only raters of parenting style over time, the validity of therapist reports was assessed by comparing items in the Authoritative Parenting score with other observational ratings of parenting behavior at baseline. Videotaped dyadic play sessions between each parent and the target child were conducted prior to the beginning of treatment, and involved each parent and the target child in three 10 minute situations requiring increasing amounts of parental control (Zucker & Fitzgerald, 1991). The first segment was child-directed play, during which the instructions were for the parent to let the target child select the play activity. Parent-directed play, where the parent selected the activity, comprised the second 10-minute segment, followed by a clean-up interval during which the parent was expected to ask the child to put away the play materials (Whipple, et al., 1995). A revised version of the Belsky Coding System for

Parent-Child Interaction (Belsky, Youngblade, Rovine, & Volling, 1991) was used to characterize the nature of these parent-child interactions. Coding was conducted by seven graduate and undergraduate students, who received a minimum of 45 hours of training, maintained 75% reliability, and were blind to other information about the families (including the fact that they were part of the intervention program).

The revised coding protocol (Whipple, Denburg, & Davies, 1992) includes 9 parent scales assessing level of warmth or affection, and type of control. These were correlated with items from the Authoritative Parenting scale of the Observer Impressions Inventory. Significant correlations are presented in Appendix E. The Authoritative Parenting factor was examined as a marker of pretreatment parenting style in the current study, and as an index of treatment-related change based on therapist observations made at the mid-treatment and termination time points (see below).

Treatment Process Measures

Treatment expectations. Prior to the commencement of treatment, parents and therapists were asked to rate their expectations about the intervention program. Specifically, parents were asked how likely they felt the program would bring about change in the target child, ranging from very likely to very unlikely (on a 5-point scale). Similarly, therapists reported their own expectations that the program would bring about change in the target child, based on their knowledge of the family. During post-test data collection visits, parents were asked to indicate their expectations that the program would produce further change or maintain already produced change in the target child, using the same 5-point scale. Therapists also reported their expectations for further change in child behavior, at the mid-treatment and termination intervals. These post-test expectation ratings were found to correlate significantly with satisfaction ratings provided by parents and therapists at the same time points. Therefore, parent and therapist

expectations were included in the composite Satisfaction scores for post-test data (see below).

Treatment investment. Treatment Investment is operationalized as the amount of parent cooperation with and receptiveness to the treatment regimen exhibited throughout the intervention process, as reflected by both within-session resistance and between-session noncompliance with homework assignments. In session-by-session analyses, Patterson and Chamberlain (1988) have found that these two indices of treatment cooperation or investment are positively related to the extent to which change in child-rearing practices and child behavior takes place. They also suggest that these factors are crucial to the understanding of individual differences among families in their responsiveness to treatment. Further, these dimensions have been found to covary with family disrupters such as parent psychopathology (e.g. Nye, 1992).

For the purposes of the present study, parent investment was measured by three instruments developed by the Oregon Social Learning Center group: Weekly Homework Ratings, the Therapist-Client Cohesion Scale, and the Client Involvement Rating. The Weekly Homework Ratings were designed to indicate the extent to which the parent(s) attempted to carry out the homework assignments, and ratings are based on a 5-point scale, ranging from "tried very hard" to "didn't try at all". The Therapist-Client Cohesion Scale is an index of the therapist's personal reactions to the parent(s) during each session. The therapist indicated how s/he felt about the parent, based on a 5-point range from "felt very positively toward" to "was very irritated with". The therapist further indicated his/her sense of how well s/he worked with each parent, ranging from "very well" to "poorly". The Client Involvement Rating is also a series of 5-point scales on which the therapist rated each parent on the amount of verbal involvement, interpersonal withdrawal, openness to new ideas, hostility or friendliness, and overall resistance or helpfulness exhibited during the sessions. All three instruments were filled out by the therapist after each session with the family. Reliability for these measures has been found to be adequate (Nye,

1992).

Other analyses on this data set identified substantial colinearity among the parent involvement, cohesion, and homework items, indicating that the use of a single investment cluster based on these three dimensions is appropriate (Nye, 1992). Therefore, cluster scores based upon a cumulation of data from Pretest through Post-test 1 (Early Investment), one cumulating treatment investment from mid-treatment through termination (Late Investment), and one summarizing investment across all sessions (Cumulative Investment) were used in the present analyses. Because fathers were not always included in the intervention program, the "Parent Investment" score was based on mothers' treatment investment scores in the Mother-only condition, and on the average of mother and father scores in the Both Parents group.

Treatment satisfaction. Treatment satisfaction measures were completed by parents and therapists at mid-treatment and upon completion of the program. These instruments present each respondent with a 5-point scale on which to rate: changes in child behavior (from much worse to much better); feelings toward the target child ("much more negative" to "much more positive"); the effect of the work on the marital relationship (from "very negative" to "very positive"), and the effect of the work on both the parent-child relationship and on each parent personally (ranging, again, from "very negative" to "very positive" effect). In addition, parents were asked to indicate how well the therapist seemed to understand problems or difficulties brought up in sessions (ranging from "doesn't understand at all" to "always understands"), and how well they liked the therapist ("not at all" to "very much"). Similarly, the therapist form asks for ratings of the parents' ability to understand treatment directions and techniques brought up in sessions, and how well the therapist liked each parent individually. Finally, the measure also includes a 7-point global rating of parent and therapist satisfaction with the treatment program, ranging from "very dissatisfied" to "very satisfied".

In order to reduce the number of variables being analyzed, a single mean Satisfaction score was generated across all items on each satisfaction inventory. As with the treatment investment mean, Parent Satisfaction scores were based on mothers' mean satisfaction ratings in the Mother-only condition, and on the average of mother and father ratings in the Both Parents group. These Satisfaction means also included parent and therapist post-test expectations about the future efficacy of the program, because of substantial correlations with the satisfaction items (Appendix F). Reliability for these satisfaction scales was found to be adequate, with standardized coefficient alphas of .81 for parent satisfaction ratings, and .89 for therapist ratings.

Treatment Outcome Measures

Child behavior problems. As described above, the Child Behavior Rating Scale -- Preschool Version (CBRS) (Noll & Zucker, 1985; adapted from Hopps, 1985) measures the extent to which the target child engages in both prosocial and undesirable or coercive behaviors, ranging from "Never" to "Always". This scale has already been used successfully to identify child behavior change in the M.S.U. intervention program (Maguin, 1991; Nye, et al, in press; Zucker, et. al., 1990). In the present study, child outcome was assessed via changes in the rates of both prosocial and negative child behavior from pretreatment to post-test levels. Correlations among mother, father, and therapist ratings of the target child's behavior are presented in Appendix G. An examination of these indicates that no two observers rated the target child's behavior consistently with one another. This is in line with other comparisons of mother, father, and therapist ratings of child behavior, which suggest that idiosyncratic variations typically occur for each rater (Patterson, Dishion, & Chamberlain, 1993). Therefore, the best estimate for child behavior was considered to be the average of all ratings, thereby reducing the contribution of idiosyncratic variance.

In the present study, mother, father, and therapist reports on the Child Behavior Rating

Scale were combined to generate an averaged index of child behavior at the pretreatment, mid-treatment, and termination time points. Because therapists were not able to make ratings of the target child's behavior at the six-month follow-up, only the mean of mother and father ratings were used for that post-test period. Correlations between the averaged child behavior scores and the individual mother, father, and therapist ratings were generally found to be substantial for all independent ratings, and incremental over the individual contributions of each rater. Thus, averaging child behavior means across raters was found to yield a meaningful summary score that represents reports from mother, father, and therapist (Appendix F). Further, analyses based on the larger treatment sample found this summary score to be correlated with coders' impressions of the target child during the videotaped parent-child interaction task. In this regard, coders' rating of how much they liked the child in the videotape was associated with both Positive and Negative Child Behavior means at baseline ($r^2 = .22$, $p < .05$ for positive behavior, and $r^2 = -.25$, $p < .01$ for negative behavior). The pretreatment positive child behavior mean was also correlated with therapists' ratings of the target child's conduct on the Observer Impressions Inventory ($r^2 = .44$, $p < .01$). Correlations between the composite Positive and Negative Child Behavior means were: $r^2 = -.07$, p = n.s. at baseline, $r^2 = -.51$, $p < .01$ at Post-test 1 (mid-treatment), $r^2 = -.56$, $p < .01$ at Post-test 2 (termination), and $r^2 = -.71$, $p < .001$ at Post-test 3 (follow-up).

Parenting style. As described earlier, the Observer Impressions Inventory was used to generate an index of Authoritative Parenting style, based on therapists' observations of interactions between parents and the target child. These observations were made and recorded by the therapist at the first session, and at the mid-treatment and termination time points. Changes in therapists' ratings of each parent's disciplinary style represent the second outcome measure of interest in this study.

CHAPTER III

RESULTS

Data Analytic Procedures

Prior to analysis, each set of data was examined for outliers. Outliers were defined as extreme values falling outside of a normal curve within a given variable's frequency distribution histogram. These were then corrected by assigning the value adjacent to the closest non-outlying variable, thus preserving the rank ordering of variables. Missing data were estimated using individual baseline parent and family variables which were significantly correlated with the variable to be estimated. Overall, this technique was used for less than 8% of the data set. The only exception to this was for parent and therapist pretreatment expectations, a significant portion of which (30-50%) were missing because the instruments measuring these were not added into the initial assessment battery until after some of the families had already begun treatment. Nonetheless, missing data points for these instruments were also estimated from parent and family baseline characteristics because of an interest in examining the relationship between pretreatment expectations and subsequent process aspects of treatment. Conclusions drawn from analyses involving pretreatment expectations must therefore be considered to be quite tentative due to the amount of missing data that were imputed.

Although typical of treatment-based studies, the small sample size raised additional data analytic considerations. Both the complexity of the conceptual model (see Figure 1) and the large number of variables relative to the number of participants precluded a path analysis of the full treatment process model. Instead, separate analyses were performed on selected smaller components of the model in order to examine the relationships of interest. This necessarily resulted in a greater overall number of analyses than would have been conducted had the sample size been able to accommodate an examination of the entire model. Although the number of

analyses extends beyond optimal parameters given the size of the sample, the majority of the preliminary analyses were conducted in order to maximize the possibility of subsequently rejecting the central hypotheses. In this regard, relationships involving pretreatment parent, family, and child characteristics -- which were hypothesized to be more distal and indirect influences on treatment outcome -- were thoroughly examined during preliminary analyses in order to ensure that relevant pretreatment predictors of outcome might be adequately controlled prior to testing the contribution of treatment process characteristics. In order to be able to more fully explore and adequately identify these relationships, one-tailed rather than two-tailed tests were used to evaluate some of the initial hypotheses regarding the relationships among pretreatment parent, child, and family characteristics, pretreatment parent and therapist expectations, and treatment process characteristics, and in examining the relationship between the child and parent treatment outcome measures.

For all analyses testing the proposed hypotheses, an alpha level of .05 was considered significant. Additional exploratory analyses examined potential interactions between pretreatment parent and child functioning and treatment process characteristics in predicting treatment outcome, as such relationships had been previously identified in research with the larger treatment sample (Nye, 1992). For these latter analyses, a more lenient 10% alpha level was used because of the restricted sample size and the exploratory nature of these tests of moderation. In general, the results of these analyses were consistent with one another and with the previous work. However, the less stringent alpha level and the observation that hypothesized interaction effects were not always significant, raised concern that identified moderator effects might be spurious. Therefore, these results were omitted from the already complex main body of the findings, and are reported in Appendix H, instead.

All variables were analyzed as continuous, except for the Treatment Condition construct

(coded as 1 for the Mother-Only condition and 2 for the Both Parents condition).

Changes in Child Behavior and Parenting Over Time

In order to establish the nature and direction of changes in the child and parent outcome measures, preliminary analyses examined variations in the Positive Child Behavior, Negative Child Behavior, and Authoritative Parenting means over time. Repeated measures MANOVAS and post-hoc (Duncan) comparisons identified significant change in child behavior between pretreatment and post-tests. An overall group effect for Positive Child Behavior was observed ($F(3,26) = 18.54$, $p < .001$), with positive behavior increasing from pretreatment to the mid-treatment, termination, and follow-up time points. Similarly, this treatment group showed an overall decrease in Negative Child Behavior from pretreatment ($F(3,26) = 11.06$, $p < .001$) to mid-treatment, termination, and follow-up. However, neither child behavior measure varied significantly between post-tests, indicating that improvement in child behavior occurred primarily during Phase 1 of treatment and was then maintained through termination and follow-up. This is consistent with an earlier study involving this treatment sample (Nye, et al., in press), suggesting that the primary treatment effect for child behavior occurred during the first, more explicitly child-focused phase of the intervention protocol, with these changes subsequently maintained but not increased over time. Comparisons between Authoritative Parenting scores revealed a significant time effect ($F(2,27) = 11.52$, $p < .001$), with parenting style becoming more authoritative from pretreatment to termination, based on Duncan post-hoc comparisons (Table 1). Thus, the intervention protocol effected significant change in both child behavior and parenting by the end of the program.

Relationship Between Child Behavior and Parenting Over Time

The relationship between the child behavior means and the Authoritative Parenting construct was examined next, to establish whether changes in the targeted parenting practices

Table 1

Post hoc Comparisons (Duncan) of Changes in Positive and Negative Child Behavior and Authoritative Parenting

	Assessment Phase								
	Pretest		Post-test 1		Post-test 2		Post-test 3		
Outcome Measure	M	SD	M	SD	M	SD	M	SD	F
Positive Behavior	3.97^{a}	.39	4.40^{b}	.40	4.49^{b}	.41	4.60^{b}	.43	13.11***
Negative Behavior	3.02^{a}	.39	2.80^{b}	.39	2.63^{b}	.39	2.66^{b}	.46	5.56**
Parenting	3.35^{a}	.46	$3.58^{a,b}$	.56	3.80^{b}	.58	--	--	5.13**

Note. Means having different superscripts are significantly different at $p < .05$ (Duncan comparisons).

** $p < .01$. *** $p < .001$.

were associated with concomitant change in the child behaviors which these parenting techniques were expected to modify. A series of partial correlational analyses (one-tailed tests of significance) were conducted to test the hypothesis that level of Authoritative Parenting at mid-treatment and termination would be associated with the Positive and Negative Child Behavior means at the same time points, with pretreatment child behavior controlled. The relationship between pretreatment parenting and post-test child behavior was also analyzed, with the expectation that Authoritative Parenting at baseline would be minimally associated with subsequent child behavior because of the changes in parenting style effected during the intervention. These analyses revealed that level of Authoritative Parenting at mid-treatment was correlated with changes in both Positive and Negative Child Behavior at the same post-test ($r^2 = .52$, $p < .01$ for Positive Behavior, and $r^2 = -.60$, $p < .001$ for Negative Behavior). Regarding these outcome measures at termination, Authoritative Parenting was associated with Positive Child Behavior ($r^2 = .47$, $p < .01$) and Negative Child Behavior ($r^2 = -.63$, $p < .001$) at the end of the intervention, with more authoritative parenting associated with greater positive and less negative child behavior. In addition, Authoritative Parenting style at termination was correlated with child behavioral outcome at follow-up for Negative Child Behavior ($r^2 = -.39$, $p < .05$), suggesting that increases in parents' authoritativeness observed during the intervention also contributed to reduced negative child behavior six months later. Pretreatment level of authoritative parenting was not significantly associated with either of the child behavior means at any post-test time point.

Influence of Pretreatment Characteristics

Pretreatment Characteristics and Treatment Outcome Measures

The analyses conducted thus far indicate that the intervention protocol was successful in increasing authoritative parenting from pretreatment to termination, as well as increasing positive child behavior and decreasing negative child behavior from pretreatment to the mid-treatment,

termination, and follow-up time points. Further, these changes in child behavior were associated with observed increases in authoritative parenting during the intervention. The next set of analyses was conducted in order to identify which parent and family characteristics at pretreatment were associated with the observed changes in child and parent outcome. These analyses tested the hypothesis that higher levels of parent psychopathology and fewer family resources prior to treatment would be associated with more impaired parenting and more problematic child behavior at all time points. One-tailed tests of partial correlations were conducted, controlling for baseline levels of parenting and child behavior. Treatment Condition (Mother-Only and Both Parents) was also included in these preliminary analyses, in order to identify potential differences in outcome related to treatment participation by one versus two parents.

Child behavior. Father psychopathology was significantly associated with both positive and negative child behavior at all time points, and in the anticipated directions. Greater Father Psychopathology at pre-treatment was associated with lower rates of Positive Child Behavior and more Negative Child Behavior at mid-treatment, termination, and follow-up, with pretreatment levels of these child behavior indices controlled. Mother Psychopathology was also positively correlated with Negative Child Behavior at all time points, but was significantly (negatively) correlated with Positive Child Behavior at follow-up only. Finally, the Family Resources cluster was positively correlated with Positive Child Behavior at mid-treatment, with pretreatment Positive Child Behavior controlled (Table 2). Treatment Condition was not significantly correlated with Positive or Negative Child Behavior at any of the time points.

Authoritative parenting. In examining the partial correlation coefficients between pretreatment parent and family characteristics and subsequent changes in parenting behavior, only Father Psychopathology was significantly correlated with Authoritative Parenting at mid-treatment

(r^2=-.46, p<.01) and termination (r^2=-.42, p<.05), with pre-treatment parenting controlled. Thus, greater paternal psychopathology at baseline was associated with more impaired parenting throughout the intervention protocol. Treatment Condition was also not found to be associated with this index of treatment outcome.

Pretreatment Characteristics and Initial Treatment Expectations

Correlations were also generated in order to examine the influence of pretreatment parent, child, and family characteristics on pretreatment parent and therapist expectations. It was anticipated that greater parent psychopathology, fewer family resources, and more problematic child behavior prior to treatment would be associated with lower initial parent and therapist expectations that the intervention would be successful. Significance tests were again one-tailed because the expected direction of these correlations was specified a priori. In these analyses, pretreatment Parent Expectations were found to be negatively correlated with Mother Psychopathology (r^2=-.33, p<.05), indicating that parents in families with mothers who were more psychologically troubled expected the intervention to be less beneficial. The association between Family Resources and Parent Expectations also approached significance (r^2= -.30, p=.06). Pretreatment Therapist Expectations were positively correlated with Family Resources (r^2=.41, p<.05) at baseline, indicating that therapists expected the intervention protocol to be more useful to families with more socioeconomic resources. Interestingly, neither initial child behavior nor pretreatment level of authoritative parenting were associated with therapist expectations, suggesting that baseline levels of those behaviors to be targeted by the intervention did not influence the extent to which therapists thought a family would benefit from the protocol. In contrast, the correlation between parent expectations and positive child behavior at baseline approached significance (r^2=.31, p=.051), suggesting that parents whose children initially exhibited more positive behaviors expected to have greater success in the program. Parent and

Table 2

Partial Correlations Between Pretest (Pretreatment) Parent and Family Characteristics and Post-test (PT) Positive and Negative Child Behavior, Controlling for Baseline Positive and Negative Child Behavior Means

	Post-test Child Behavior Mean					
Pretest Characteristic	Positive Behavior			Negative Behavior		
	PT 1	PT 2	PT 3	PT 1	PT 2	PT 3
Mother Psychopathology	-.19	-.30	-.31*	.31*	.35*	.31*
Father Psychopathology	-.40*	-.46**	-.38*	.39*	.39*	.31*
Family Resources	.42**	.25	.26	-.05	-.10	-.30

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

Therapist Expectations at baseline were poorly related (r^2= .04, p=n.s.).

Pretreatment Characteristics and Treatment Process Measures

The next set of analyses examined the extent to which baseline parent and family characteristics were also significantly associated with parent treatment investment, and parent and therapist satisfaction ratings (including expectations about continued treatment progress) throughout the intervention. One-tailed tests of Pearson correlations were conducted to test the hypothesis that greater parent psychopathology and fewer family resources would be associated with less parent investment, and with less parent and therapist satisfaction with treatment over time.

Parent treatment investment. No parent or family baseline characteristics were significantly associated with level of Parent Investment during the first half of the intervention (Early Investment), although correlations with Mother Psychopathology and Father Psychopathology approached significance (r^2=-.28, p=.07 for both). Baseline level of Positive Child Behavior was positively associated with Early Parent Investment (r^2=.47, p<.01), and the correlation between pretreatment Authoritative Parenting and Early Investment also approached significance (r^2= .31, p=.053). For Parent Investment during the second half of treatment, Father Psychopathology was significantly correlated (r^2=-.31, p<.05), and Mother Psychopathology approached significance (r^2=-.29, p=.07). Further, baseline level of Positive Child Behavior was positively correlated with Phase 2 Parent Investment (r^2=.42, p<.05). Cumulative Parent Investment from Session 1 to termination was also correlated with pretreatment Positive Child Behavior (r^2=.32, p<.05). Cumulative Investment was not significantly associated with baseline parent or family characteristics, although the correlation with Father Psychopathology again approached significance (r^2=-.27, p=.09). Thus, parents whose child exhibited more prosocial behaviors prior to treatment were more highly invested in

the intervention protocol. Level of mother and father psychopathology was not significantly correlated with measures of parent treatment investment, with the exception of father psychopathology and investment during Phase 2 of the protocol.

Parent and therapist treatment satisfaction. Pretreatment level of Father Psychopathology was negatively correlated with reported Parent Satisfaction at mid-treatment (r^2=-.37, $p<.05$), termination (r^2= -.47, $p<.01$), and follow-up (r^2= -.42, $p<.01$). Baseline Mother Psychopathology was negatively correlated with Parent Satisfaction at mid-treatment (r^2= -.32, $p<.05$) and termination (r^2=-.37, $p<.05$), but not significantly so at follow-up (r^2=-.28, $p=.07$). Father Psychopathology was also negatively correlated with Therapist Satisfaction ratings at both the mid-treatment (r^2= -.39, $p<.05$) and termination (r^2= -.36, $p<.05$) time points. Thus, higher levels of both maternal and paternal psychopathology were associated with less treatment satisfaction and more negative expectations about subsequent progress among participating parents. In contrast, therapists' satisfaction with the families' progress and expectations for continued improvement appear to have been more exclusively tied in with level of paternal psychopathology, despite the fact that only a subset of fathers in the study actually participated in the intervention. This supports other evidence that fathers may make a unique contribution to the success of behavioral interventions (Horton, 1984; Patterson & Stoolmiller, in press), and the suggestion that fathers who are not participating in a treatment program may nonetheless have an impact on treatment process and outcome characteristics (Nye, et al., in press).

Relationships Among Treatment Process Characteristics

In the next set of analyses, the relationships among pretreatment parent and therapist expectations, parent treatment investment, and parent and therapist satisfaction ratings were examined. It was anticipated that initial parent and therapist expectations would be positively

associated with subsequent parent investment in the first half of treatment (Phase 1). In turn, Phase 1 Parent Investment was expected to be positively associated with Parent and Therapist Satisfaction ratings (including expectations for future change) at mid-treatment. Finally, mid-treatment Parent and Therapist Satisfaction levels were expected to be related to subsequent (Phase 2) Parent Treatment Investment, with greater satisfaction at mid-treatment associated with higher levels of investment in the second half of treatment. These hypotheses were tested using a series of bivariate correlations and hierarchical regressions.

Pretreatment Expectations and Subsequent Investment

Two regression equations examined parent and therapist pretreatment expectations as predictors of subsequent parent treatment investment during Phase 1 (Early Parent Investment). Parent Expectations were significantly associated with Early Investment (R^2=.39, F(1,27)=4.7, $p<.05$), whereas Therapist Expectations were not (R^2=.09, F(1,27)= .23, p=n.s.). Thus, parents' initial expectations about the potential benefits of the intervention were predictive of parents' subsequent investment in the first half of treatment, whereas therapists' expectations were not related to observed parent investment. Because a significant portion of the data involving parent and therapist expectations at baseline was estimated from other pretreatment parent and family characteristics, these relationships were also tested for the subset of families for whom these data were not estimated. These analyses revealed similar trends, with Parent Expectations associated with Early Treatment Investment (R^2=.19, F(1,18)=4.26, p=.054) and Therapist Expectations showing no such relationship (R^2=.06, F(1,12)=.71, p=n.s.).

Treatment Investment and Parent and Therapist Satisfaction

The next set of analyses examined the extent to which Early (Phase 1) and Late (Phase 2) Parent Treatment Investment measures were associated with Parent and Therapist Satisfaction (including expectations for future change) at mid-treatment and termination. It was anticipated

that parent and therapist reports of satisfaction would be positively associated with both prior and subsequent levels of investment exhibited by the parents. Through a series of bivariate (Pearson) correlational analyses, Parent and Therapist Satisfaction at mid-treatment and termination were observed to be significantly associated with Early and Late Parent Investment (Table 3).

Because of the observed association between parent treatment investment and parent and therapist satisfaction at different points in treatment, it was considered important to next examine whether treatment investment and satisfaction were predictive of one another with prior levels controlled for. Thus, hierarchical regression analyses were used to examine the temporal linkages between treatment investment and satisfaction ratings over the course of the intervention, with the treatment process model broken down into more manageable components:

	Pretreatment	Phase 1	Mid-treatment	Phase 2	Termination
1)	Expectations-->	Investment-->	Satisfaction		
2)		Investment-->	Satisfaction------>	Investment	
3)			Satisfaction------>	Investment-->	Satisfaction

For each equation, the predictor variable (Investment or Satisfaction) was entered on Step 2, after controlling for prior level of the dependent variable. In examining the first proposed relationship, between Phase 1 Parent Treatment Investment and Mid-treatment Parent Satisfaction, Pretreatment Parent Expectations were entered first into the equation, followed by the Early Investment score. In this analysis, Early Parent Investment was a significant predictor of subsequent Parent Satisfaction, but Pretreatment Parent Expectations were not (Table 4). Thus, parents' level of investment and motivation demonstrated during the first half of treatment was positively associated with the extent to which parents reported at mid-treatment that they were satisfied with the intervention thus far and that they anticipated continued success in the program. The hypothesized predictive equation for Mid-treatment Therapist Satisfaction ratings was not run

Table 3

Pearson Correlations Between Early and Late Parent Treatment Investment and Parent and Therapist Satisfaction Ratings at Mid-treatment and Termination

	Parent Treatment Investment	
Satisfaction Rating	Early Investment	Late Investment
Mid-treatment Parent Satisfaction	.50**	.44**
Mid-treatment Therapist Satisfaction	.71***	.59***
Termination Parent Satisfaction	.50**	.53***
Termination Therapist Satisfaction	.50**	.60***

**$p < .01$. ***$p < .001$.

because it was considered to be redundant with the results of the earlier correlational analyses, which already demonstrated that Phase 1 Parent Investment was significantly associated with mid-treatment Therapist Satisfaction ($r^2 = .71$, $p < .001$), while Pretreatment Therapist Expectations were not ($r^2 = -.05$, p=n.s.). Thus, satisfaction and positive expectations reported by both parents and therapists at the mid-treatment time point were related to the level of investment shown by participating parents during the first half of the intervention.

For the second proposed set of hierarchical regression analyses, mid-treatment parent and therapist satisfaction ratings were examined separately as predictors of parent treatment investment during Phase 2, controlling for prior (Phase 1) level of parent investment. In these analyses, neither parent nor therapist satisfaction ratings were significantly associated with subsequent parent treatment investment when Early Parent Investment was accounted for. Thus, greater satisfaction by parents and therapists at mid-treatment, although significantly correlated with higher levels of subsequent parent treatment investment, did not contribute to the prediction of Phase 2 Investment beyond the influence of Phase 1 Investment. In testing the final segment of the predictive model (Equation 3), separate regression analyses were conducted with Late (Phase 2) Parent Investment as a predictor of subsequent Parent and Therapist Satisfaction at termination, controlling for prior (mid-treatment) level of satisfaction. In predicting Parent Satisfaction at termination, Late Parent Treatment Investment only approached significance at Step 2, after mid-treatment Parent Satisfaction was entered into the equation ($\Delta R^2 = .08$, $p = .058$). Similarly, Therapist Satisfaction at mid-treatment was found to be the main contributor in the prediction of subsequent Therapist Satisfaction at termination ($R^2 = .52$, $F(1,27) = 28.81$, $p < .001$), as Late Parent Treatment Investment did not account for a significant portion of the variance in Step 2 of the predictive equation ($\Delta R^2 = .04$, $p = .11$). Thus, although significantly correlated with level of prior parent treatment investment, both parent and therapist satisfaction ratings at

Table 4

Hierarchical Regression Analysis of Early (Phase 1) Parent Treatment Investment as a Predictor of Mid-treatment Parent Satisfaction, With Pretreatment Parent Treatment Expectations Controlled

Treatment Process Variable	B	SE B	*B*	R^2
Step One				.05
Pretreatment Parent Expectations	.17	.14	.23	
Step Two				.25*
Pretreatment Parent Expectations	.03	.14	.04	
Early Treatment Investment	.69	.26	.48*	

*$p < .05$.

termination were most strongly associated with level of satisfaction with the program at mid-treatment.

Together, these analyses demonstrate that parent treatment investment was significantly correlated with parent and therapist satisfaction levels across time, but neither investment nor satisfaction was predictive of the other when prior levels of investment and satisfaction were accounted for. One possible explanation for this is that parent investment and parent and therapist satisfaction did not change significantly between the time points at which they were measured in this intervention, thereby making the earlier and later indices of these essentially the same. This explanation may partially account for these findings, as mid-treatment and termination ratings of parent and therapist satisfaction were not observed to be significantly different (M=.04, SD=.56 at mid-treatment and M=.02, SD= .57 at termination for Parent Satisfaction, $t(28)$= -.24, p=.815, two-tailed; and M=.00, SD=.66 at mid-treatment and M=.02, SD=.67 at termination for Therapist Satisfaction, $t(28)$= .16, p=.87, two-tailed). However, a significant difference was found between Early (M=3.63, SD=.40) and Late (M=3.31, SD=.75) Parent Investment scores, with an overall drop in investment observed during Phase 2 of the program ($t(28)$=3.01, p<.01, two-tailed). An alternative explanation for the lack of association between mid-treatment satisfaction ratings and subsequent parent treatment investment may be that the observed drop in Phase 2 investment was somewhat experimentally manipulated. That is, during Phase 2 of the intervention protocol, the therapists' work with the families purposely shifted from intensive weekly sessions focusing on targeted child behaviors and parenting practices, to bi-weekly meetings to address communication and problem-solving skills between the parents, as well as to continue to stabilize the child management techniques developed in Phase 1. Other reports on these families indicate that this transition was sometimes a difficult one for families (e.g. Nye, 1992), as the protocol moved away from its sole parent

training approach, to also address what were typically longer-term and more problematic family interaction patterns. Because the satisfaction ratings made by parents and therapists at mid-treatment were based on their feelings regarding the previous child-focused work, they would not necessarily predict parents' subsequent reactions to and investment in the marital problem-solving aspects of the program.

Parent and Therapist Satisfaction

Correlations between parent and therapist satisfaction ratings were also examined to evaluate the extent of similarity in parents' and therapists' perceptions of treatment progress and process. Parent and Therapist Satisfaction were highly correlated at mid-treatment ($r^2 = .48$, $p < .01$, two-tailed) and termination ($r^2 = .73$, $p < .001$, two-tailed). In addition, therapists' expressed satisfaction with the success of the intervention was also correlated with parents' reports of satisfaction at the six-month follow-up ($r^2 = .61$, $p < .001$, two-tailed). Thus, parents and therapists were found to have generally similar perceptions regarding the effectiveness of the treatment and expectations that the program would continue to be beneficial to the families (Table 5).

Relationships Among Treatment Process and Treatment Outcome Variables

The analyses conducted thus far have identified which pretreatment parent and family characteristics were associated with subsequent treatment process and outcome, and have also examined the relationships among treatment process characteristics. What remains to be examined is whether aspects of the treatment process are predictive of treatment outcome, and if this association is maintained when pretreatment predictors of outcome are controlled. In reference to the first question, the next set of analyses examined the association between treatment process characteristics (parent and therapist satisfaction, and parent treatment investment) and treatment outcome (changes in child behavior and parenting). It was anticipated that both parent

and therapist satisfaction ratings at Post-test would be positively associated with improvement in child behavior and parenting from pretreatment to the same time points. Further, it was hypothesized that level of parent treatment investment would be predictive of subsequent parenting and child behavior ratings, with greater parent investment associated with more positive parent and child outcomes.

Treatment Satisfaction and Child Behavior Change

In order to examine the relationship between satisfaction and child outcome, partial correlations were generated, controlling for pretreatment level of child behavior. Parent Satisfaction at mid-treatment, termination, and follow-up was expected to be positively correlated with Positive Child Behavior and negatively correlated with Negative Child Behavior at the same time points. Similarly, Therapist Satisfaction was anticipated to be positively associated with changes in Positive Child Behavior from pretreatment to the mid-treatment and termination time points, and to be negatively associated with Negative Child Behavior at these time points when pretreatment Negative Behavior was partialled out. Overall, these hypotheses were supported, with both parent and therapist satisfaction ratings correlated in the expected direction with post-test ratings of child behavior (Table 6). The only relationships which were not found to be significant at the 95% confidence level were Parent Satisfaction with Positive Child Behavior at mid-treatment ($r^2 = .21$, $p = .14$, one-tailed) and with Negative Child Behavior at follow-up ($r^2 = -.30$, $p = .06$, one-tailed).

Treatment Satisfaction and Changes in Parenting

Partial correlations were also generated in order to examine the relationship between satisfaction and parenting outcome, with pretreatment parenting partialled out. It was anticipated that parent and therapist reports of satisfaction with treatment would be positively associated with concomitant changes in parenting from pretreatment to the mid-treatment and termination time

Table 5

Pearson Correlations between Parent and Therapist Satisfaction Ratings at Post-test Time Points

	Therapist Satisfaction Rating	
Parent Satisfaction Rating	Mid-treatment Satisfaction	Termination Satisfaction
Mid-treatment Satisfaction	.48**	.50**
Termination Satisfaction	.53**	.73****
Follow-up Satisfaction	.39*	.61****

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed. ****$p < .0001$, two-tailed.

points. At mid-treatment (Post-test 1), both Parent and Therapist Satisfaction were correlated with change in Parenting, with increases in parent authoritativeness from pretreatment to mid-treatment coinciding with greater parent and therapist satisfaction with treatment. Similarly, increased authoritative parenting from pretreatment to termination was associated with greater parent and therapist satisfaction at termination (see Table 6).

Parent Treatment Investment and Child Behavior Change

The role of parent treatment investment in accounting for changes in child behavior from pretreatment levels was examined via hierarchical regression analyses conducted for the positive and negative child behavior means at mid-treatment, termination, and follow-up. Changes in child behavior from mid-treatment to termination and from termination to follow-up were not examined, because of the earlier observation that initial improvement in child behavior at mid-treatment remained relatively constant thereafter. In all cases, pretreatment child behavior was entered in Step 1 of the equations, followed by parent treatment investment in Step 2. Interactions between parent treatment investment and pretreatment child behavior were also examined but are presented in Appendix H because of their exploratory nature and less stringent effect size criterion.

Positive child behavior. Three regression equations were used to examine changes in positive child behavior from pretreatment to the mid-treatment (PT 1), termination (PT 2), and follow-up (PT 3) time points, using previous level of parent treatment investment as a predictor of subsequent child behavior. It was anticipated that parent treatment investment during Phase 1 of the intervention program would be a positive predictor of positive child behavior at mid-treatment, with pretreatment level of positive behavior controlled. For the termination and follow-up time points, it was hypothesized that the cumulative level of parent treatment investment from Session 1 to termination would be positively associated with changes in positive

Table 6

Partial Correlations (One-tailed) Comparing Parent and Therapist Satisfaction Ratings with Child and Parent Outcomes at the Same Time Points, Controlling for Baseline Child Behavior and Parenting Style

	Treatment Outcome Measure		
Satisfaction Rating	Positive Child Behavior	Negative Child Behavior	Authoritative Parenting
Parent Satisfaction			
Mid-treatment	.21	-.51**	.53**
Termination	.38*	-.52**	.43*
Follow-up	.45**	-.30	--
Therapist Satisfaction			
Mid-treatment	.33*	-.58***	.73***
Termination	.54**	-.64***	.63***

*$p < .05$. **$p < .01$. ***$p < .001$.

child behavior. These analyses indicate that Early Parent Treatment Investment was not a significant predictor of Positive Child Behavior at mid-treatment, with pretreatment positive behavior controlled ($\Delta R^2 = .10$, $p = .055$). For changes in Positive Child Behavior from pretreatment to termination, Cumulative Parent Investment was a predictor, with baseline positive behavior controlled ($\Delta R^2 = .31$, $p < .001$). However, when Positive Child Behavior at follow-up (PT 3) was examined, Cumulative Investment was not predictive beyond the contribution of pretreatment Positive Child Behavior. Thus, parent treatment investment was found to account for changes in positive child behavior from pretreatment to termination, but not at the mid-treatment or follow-up time points (Table 7).

Early Treatment Investment was also tested as a predictor of Positive Child Behavior at termination. With pretreatment level of positive behavior controlled, Early Investment was not a significant predictor of termination level of positive child behavior ($\Delta R^2 = .10$, $p = .07$). Thus, initial (Phase 1) levels of parent treatment investment did not account for change in positive child behavior occurring during the intervention.

Negative child behavior. The influence of parent treatment investment on changes in negative child behavior from pretreatment to the mid-treatment, termination, and follow-up time points was also examined using similar hierarchical regression analyses. Level of parent treatment investment during Phase 1 of the intervention program was expected to be negatively associated with negative child behavior at mid-treatment, with pretreatment negative child behavior partialled out. For negative child behavior at termination and follow-up, it was anticipated that cumulative parent treatment investment across all sessions would be negatively related to changes in negative child behavior from pretreatment level. In these analyses, Early Parent Treatment Investment was predictive of mid-treatment (PT 1) Negative Child Behavior, with pretreatment Negative Behavior controlled. Cumulative Treatment Investment was also

Table 7

Hierarchical Regression Analyses of Parent Treatment Investment as a Predictor of Positive Child Behavior from Baseline (Pretreatment) to Mid-treatment, Termination, and Follow-up Levels

Predictor Variable	B	SE B	*B*	R^2
Mid-treatment Positive Child Behavior				
Step One				.28**
Baseline Positive Child Behavior	.55	.17	.53**	
Step Two				.38**
Baseline Positive Child Behavior	.38	.18	.37*	
Early Treatment Investment	.36	.18	.35	
Termination Positive Child Behavior				
Step One				.15*
Baseline Positive Child Behavior	.41	.19	.39*	
Step Two				.31**
Baseline Positive Child Behavior	.21	.19	.20	
Cumulative Treatment Investment	.37	.15	.45*	
Follow-up Positive Child Behavior				
Step One				.15*
Baseline Positive Child Behavior	.43	.20	.39*	
Step Two				.17
Baseline Positive Child Behavior	.37	.22	.33	
Cumulative Treatment Investment	.12	.17	.14	

*p < .05. **p < .01. ***p < .001.

found to make a unique contribution in the prediction of Negative Child Behavior from pretreatment to both termination and follow-up (Table 8).

Early Investment was also tested as a predictor of change in Negative Child Behavior at termination, from pretreatment level. With pretreatment Negative Behavior entered first in the regression equation, Early Treatment Investment was significantly associated with Negative Child Behavior at the end of the intervention ($\Delta R^2 = .16$, $p < .05$). Thus, greater investment shown by parents in the first half of the intervention was associated with decreased negative child behavior approximately six months later. This suggests that therapist ratings of parent investment were not merely correlational with changes in child behavior, but that treatment investment contributed to observed child outcome.

Because of the observed relationship between parent pretreatment expectations and negative child behavior at mid-treatment, an additional hierarchical regression of early investment on subsequent negative child behavior was conducted with parent expectations controlled. In this analysis, Parent Expectations lost their predictive association with mid-treatment Negative Child Behavior, suggesting that Early Treatment Investment was a mediator of pretreatment parent expectations on subsequent child outcome (Table 9).

Parent Treatment Investment and Changes in Parenting

Parent treatment investment was also examined as a predictor of changes in level of authoritative parenting style from pretreatment to mid-treatment and termination. It was hypothesized that parent treatment investment during Phase 1 of the intervention (Early Investment) would be positively associated with parenting at mid-treatment, beyond the influence of pretreatment parenting. In addition, it was anticipated that level of parent investment throughout the course of the intervention would be a positive predictor of change in parenting from pretreatment to termination. Again, changes in parenting from mid-treatment to termination

Table 8

Hierarchical Regression Analyses of Parent Treatment Investment as a Predictor of Negative Child Behavior from Baseline to Mid-treatment, Termination, and Follow-up Levels

Predictor Variable	B	SE B	*B*	R^2
Mid-treatment Negative Child Behavior				
Step One				.26**
Baseline Negative Child Behavior	.52	.17	.51**	
Step Two				.55***
Baseline Negative Child Behavior	.47	.14	.46**	
Early Treatment Investment	-.54	.13	-.54***	
Termination Negative Child Behavior				
Step One				.24**
Baseline Negative Child Behavior	.49	.17	.49**	
Step Two				.55***
Baseline Negative Child Behavior	.44	.13	.43**	
Cumulative Treatment Investment	-.45	.11	-.56***	
Follow-up Negative Child Behavior				
Step One				.25**
Baseline Negative Child Behavior	.60	.20	.50**	
Step Two				.39**
Baseline Negative Child Behavior	.56	.18	.47**	
Cumulative Treatment Investment	-.34	.14	-.37*	

*p < .05. **p < .01. ***p < .001.

Table 9

Hierarchical Regression Analysis of Early (Phase 1) Parent Treatment Investment as a Predictor of Mid-treatment Negative Child Behavior, With Pretreatment Parent Treatment Expectations and Negative Child Behavior Controlled

Predictor Variable	B	SE B	*B*	R^2
Step One				.26**
Pretreatment Negative Behavior	.52	.17	.51**	
Step Two				.40**
Pretreatment Negative Behavior	.57	.16	.55**	
Pretreatment Parent Expectations	-.21	.08	-.38*	
Step Three				.58****
Pretreatment Negative Behavior	.50	.13	.49**	
Pretreatment Parent Expectations	-.11	.08	-.20	
Early Treatment Investment	-.46	.14	-.46**	

*p < .05. **p < .01. ***p < .001. ****p < .0001.

were not examined, because these post-test levels were not found to deviate significantly from one another. In these analyses, Authoritative Parenting at mid-treatment was positively associated with Early Parent Treatment Investment, beyond the influence of pretreatment parenting ($\Delta R^2 = .25$, $p < .001$). Similarly, change in Parenting from pre-treatment to termination was positively associated with Cumulative Parent Investment ($\Delta R^2 = .43$, $p < .0001$) (Table 10).

In order to test the direction of effect between treatment investment and changes in parenting, Early Investment was also examined as a predictor of Authoritative Parenting at termination. This analysis identified a significant positive relationship between Phase 1 Treatment Investment and Authoritative Parenting at termination, with pretreatment parenting controlled ($R^2 = .34$, $p < .0001$).

Parent, Family, and Treatment Process Characteristics in the Prediction of Treatment Outcome

Analyses conducted thus far have identified both pretreatment and treatment process characteristics as influences on changes in child behavior and parenting from pretreatment levels. In this regard, both father and mother psychopathology were positively associated with level of negative child behavior at the end of treatment. In addition, father psychopathology was negatively correlated with positive child behavior and authoritative parenting at termination. Regarding treatment process characteristics, parent treatment investment and parent and therapist satisfaction ratings were all positively associated with improvements in child behavior and authoritative parenting. However, the extent to which these treatment process characteristics are associated with treatment outcome beyond the contribution of pretreatment parent and family characteristics remains to be examined. In light of research suggesting that treatment process characteristics make a unique contribution to treatment outcome (e.g. Nye, et al., in press; Patterson & Chamberlain, 1988), it was hypothesized that measures of parent investment and parent and therapist satisfaction would be associated with changes in both child behavior and

Table 10

Hierarchical Regression Analyses of Parent Treatment Investment as a Predictor of Authoritative Parenting from Baseline (Pretreatment) to Mid-treatment and Termination Levels

Predictor Variable	B	SE B	*B*	R^2
Mid-treatment Parenting Style				
Step One				.21*
Baseline Parenting Style	.55	.21	.46*	
Step Two				.67***
Baseline Parenting Style	.29	.14	.24	
Early Treatment Investment	1.00	.17	.71***	
Termination Parenting Style				
Step One				.22**
Baseline Parenting Style	.60	.21	.47**	
Step Two				.65****
Baseline Parenting	.35	.15	.28*	
Cumulative Treatment Investment	.81	.14	.68****	

*p < .05. **p < .01. ***p < .001. ****p < .0001.

parenting at termination. Further, it was anticipated that this effect would be maintained when relevant pretreatment parent and family characteristics were controlled.

In order to test this hypothesis, conceptually guided hierarchical regression analyses were conducted to predict changes in positive child behavior, negative child behavior, and authoritative parenting at termination, from pretreatment levels. At Step 1 was entered the relevant baseline child or parent measure as the index of change. In Step 2 were entered what were considered to be distal, pretreatment influences on outcome. In this regard, both mother and father psychopathology were identified earlier as pretreatment correlates of child behavior and parenting outcomes. Because Mother Psychopathology was observed to have substantial but not always significant association with the outcome measures, a combined Parent Psychopathology variable was used to maximize the potential contribution of pretreatment parent functioning on child and parent outcome, as well as to reduce the number of variables considered. The Family Resources variable was not included as a predictor because the earlier partial correlation analyses did not determine it to be significantly related to any of the outcome measures at termination. In Step 3 of the equations were entered the more proximal, treatment-related predictors of outcome at termination. In order to reduce the number of variables in the equations, and because of the substantial colinearity observed among these treatment process constructs, investment and satisfaction ratings were combined into one "Treatment Process" variable comprised of cumulative parent and therapist satisfaction ratings and parent treatment investment means (Alpha=.83). This variable was entered as the final predictor in the regression equations, representing the most proximal predictor of child and parenting outcomes.

Change in Positive and Negative Child Behavior at Termination

The equation for Positive Child Behavior at termination included pretreatment Positive Child Behavior, Parent Psychopathology, and the Treatment Process construct. Treatment

Process was not found to be a significant predictor of Post-test 2 Positive Child Behavior with pretreatment Positive Behavior and Parent Psychopathology controlled (Table 11). For Negative Child Behavior at termination, pretreatment Negative Child Behavior (Step 1), and Parent Psychopathology (Step 2) were entered into the equation prior to the Treatment Process cluster. In this analysis, Treatment Process characteristics were negatively associated with Negative Child Behavior at termination ($\Delta R^2 = .26$, $p < .001$), but Parent Psychopathology was not a significant predictor (Table 12). Thus, greater parent investment and parent and therapist satisfaction was the primary predictor of decreased negative child behavior at termination, from pretreatment level.

Change in Authoritative Parenting at Termination

The predictive equation for Post-test 2 Parenting included pretreatment Parenting (Step 1) and Parent Psychopathology (Step 2), in addition to the Treatment Process variable. The Treatment Process measure was positively associated with Parenting at termination ($\Delta R^2 = .16$, $p < .001$) with pretreatment parenting and parent psychopathology controlled (Table 13), indicating that greater parent investment and parent and therapist satisfaction were related to more authoritative parenting at the end of treatment.

Tests of Mediation

In light of the observed correlation of mother and father psychopathology with parent treatment investment and parent and therapist satisfaction ratings, the final analyses examined the extent to which the Treatment Process construct served as a mediator of the impact of parent psychopathology on child and parent outcome. In order to demonstrate that a variable is a mediator between an independent and a dependent variable, the independent variable and the presumed mediator must be related both to one another and to the dependent variable (Baron & Kenney, 1986). Therefore, partial correlations associating the Parent Psychopathology and

Table 11

Hierarchical Regression Analysis of Parent Psychopathology and Treatment Process Characteristics as Predictors of Positive Child Behavior from Baseline (Pretreatment) to Termination Level

Predictor Variable	B	SE B	*B*	R^2
Step One				.15*
Baseline Positive Child Behavior	.41	.19	.39*	
Step Two				.33**
Baseline Positive Child Behavior	.44	.17	.42*	
Parent Psychopathology	-.08	.03	-.42*	
Step Three				.40**
Baseline Positive Child Behavior	.35	.17	.33	
Parent Psychopathology	-.05	.03	-.27	
Cumulative Treatment Investment	.22	.13	.32	

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 12

Hierarchical Regression Analysis of Parent Psychopathology and Treatment Process Characteristics as Predictors of Negative Child Behavior from Baseline (Pretreatment) to Termination Levels

Predictor Variable	B	SE B	*B*	R^2
Step One				.24**
Baseline Negative Child Behavior	.49	.17	.49**	
Step Two				.31**
Baseline Negative Child Behavior	.42	.17	.41*	
Parent Psychopathology	.05	.03	.28	
Step Three				.57***
Baseline Negative Child Behavior	.51	.14	.50**	
Parent Psychopathology	-.002	.03	-.01	
Treatment Process Characteristics	-.38	.10	-.58***	

*p < .05. **p < .01. ***p < .001.

Table 13

Hierarchical Regression Analysis of Parent Psychopathology and Treatment Process Characteristics as Predictors of Authoritative Parenting Style from Baseline (Pretreatment) to Termination

Predictor Variable	B	SE B	*B*	R^2
Step One				.22**
Baseline Parenting Style	.60	.21	.47**	
Step Two				.34**
Baseline Parenting Style	.62	.20	.49**	
Parent Psychopathology	-.09	.04	-.34*	
Step Three				.60****
Baseline Parenting Style	.54	.16	.43**	
Parent Psychopathology	-.01	.04	-.04	
Treatment Process Characteristics	.76	.19	.59***	

*p < .05. **p < .01. ***p < .001. ****p < .0001.

Treatment Process constructs with termination levels of child behavior and authoritative parenting were generated. These indicate significant relationships between Parent Psychopathology and both Positive Child Behavior ($r^2 = -.46$, $p < .01$, one-tailed) and Authoritative Parenting ($r^2 = -.38$, $p < .05$, one-tailed) at termination, controlling for baseline child and parent functioning. The Treatment Process construct was associated with termination levels of Positive Child Behavior ($r^2 = .52$, $p < .01$, one-tailed), Negative Child Behavior ($r^2 = -.57$, $p < .001$, one-tailed), and Authoritative Parenting ($r^2 = .68$, $p < .001$, one-tailed), with pretreatment levels of these outcome measures controlled. Finally, Parent Psychopathology and Treatment Process Characteristics were observed to be significantly associated with one another, based on a one-tailed test of their bivariate (Pearson) correlation ($r^2 = -.47$, $p < .01$). Therefore, the initial requirements for demonstrating mediation were met for the Positive Child Behavior and Authoritative Parenting outcome measures. However, only the Authoritative Parenting equation was tested for mediation because of the observation that Treatment Process Characteristics did not directly predict Positive Child Behavior at termination beyond the contribution of baseline child behavior and parent psychopathology.

In order to test the hypothesis that treatment process characteristics mediated the relationship between parent psychopathology and parenting outcome, a stepwise regression analysis was conducted. If treatment process characteristics mediate the effects of parent psychopathology on parenting outcome at termination, the Treatment Process cluster would be expected to enter into the predictive equation, while the Parent Psychopathology index would presumably be omitted. Therefore, the predictive equation was set up to first enter pretreatment level of authoritative parenting as the index of change, and then to consider Parent Psychopathology and Treatment Process Characteristics in a stepwise fashion on Step 2.

In predicting change in Authoritative Parenting at termination from pretreatment level, Treatment

Process characteristics emerged as a salient predictor ($\Delta R^2 = .38$, $p < .001$), whereas Parent Psychopathology did not. Thus, treatment process characteristics appear to account for the relationship between pretreatment parent psychopathology and termination level of authoritative parenting within this sample of treatment families.

Power Analyses

In order to evaluate the magnitude of the observed effect sizes for this relatively small treatment sample, statistical power analyses were conducted on the final equations used in predicting treatment outcome. Regarding the overall predictive equations for positive and negative child behavior and authoritative parenting, power ranged from 82 to 99 at $p < .01$, suggesting that the predictive ability of these relationships is significantly better than what would be expected by chance. Power was also substantial regarding the unique contribution made by the treatment process characteristics in predicting negative child behavior and authoritative parenting at termination (estimated at 81 and 75, respectively, at $p < .05$). Power for the test of mediation between parent psychopathology and treatment process characteristics was also determined to be adequate (approximately 99 overall, and 87 for Treatment Process Characteristics, at $p < .01$).

CHAPTER IV

DISCUSSION

This study provides substantial support for the role of treatment process characteristics as proximal determinants of treatment outcome in parent training interventions, with pretreatment parent, family, and child characteristics representing more distal influences on treatment success. In particular, these findings indicate that parent investment, parent and therapist expectations, and parent and therapist satisfaction are important components of treatment that were directly associated with changes in child behavior and parenting style among the subset of families who completed the early intervention parent training protocol. This is consistent with a small but growing body of literature which has also identified parent expectations (Clark & Baker, 1983), parent satisfaction (Furey & Basili, 1988), and parent treatment investment (e.g. Nye, et al., in press; Patterson & Chamberlain, 1994; Patterson, Dishion, & Chamberlain, 1993; Patterson & Stoolmiller, Stoolmiller, et al., 1993) as correlates of outcome in parent training interventions. The present work expanded on this previous research by including therapist perceptions of treatment as potential influences on outcome, and by examining the interplay among these various parent and therapist treatment process characteristics as predictors of treatment effectiveness. In addition, this report represents both a refinement and a substantial extension upon earlier work with families in the M.S.U. program, through the inclusion of paternal as well as maternal investment ratings, the use of multiple reports of child behavior, the examination of authoritative parenting style as an additional outcome variable, and the focus on parent and therapist treatment expectations and satisfaction as other process characteristics associated with treatment success.

Pretreatment Influences on Outcome

Overall, the M.S.U. intervention program was found to be successful in effecting change in child and parenting outcome from pretreatment levels, as comparisons of the child behavior

means and authoritative parenting scores across pretest and post-tests revealed increased positive child behavior, decreased negative child behavior, and more authoritative parenting from baseline. Further, as expected, changes in child behavior were correlated with changes in parenting at the mid-treatment and termination time points, but were not associated with pretreatment parenting style. The finding that the intervention contributed to both a reduction in negative child behavior and an increase in positive child behavior is particularly significant in light of evidence that preschool-aged children with conduct problems not only exhibit an extreme rate of aversive behaviors, but also display fewer prosocial interactions (Gardner, 1987). Therefore, improved outcomes on both of these dimensions would be expected to enhance the ability of this intervention program to prevent the development of child conduct problems later on.

Subsequent analyses identified which pretreatment parent and family characteristics represented distal influences on child and parenting outcomes. Of particular importance is the observation that father psychopathology was the one pretreatment characteristic that was consistently associated with positive child behavior, negative child behavior, and authoritative parenting at the various post-test time points. The association between fathers' functioning and subsequent child behavior is consistent with other research showing that fathers play a significant role in the development of childhood psychopathology (e.g. Phares & Compas, 1992). Further, the negative correlation between father psychopathology and authoritative parenting indicates that both fathers' and mothers' acquisition of new parenting techniques may have been impaired by the level of paternal distress. This supports other research which has found an association between paternal depression and impaired maternal child-rearing practices (Davies, et al., 1989; Schneider, et al., 1989). Although mother psychopathology was not observed to be as consistently correlated with changes in positive child behavior, it should be noted that this

treatment sample was selected because of the fathers' alcohol problems, with the expectation that sons of these alcoholic fathers would be at significantly elevated risk for the development of problem behaviors in childhood and problems with alcohol later in life. Therefore, level of father psychopathology in this sample was anticipated to be a particularly salient correlate of child behavior. This is further supported by research on the larger group of families in the longitudinal parent project, which found a significant positive association between paternal psychopathology and problematic child symptomatology (Jansen, Fitzgerald, Ham, & Zucker, in press).

In addition to their role as distal predictors of child and parenting outcome, pretreatment parent, child, and family characteristics were observed to be indirectly correlated with treatment outcome through their association with the more proximal treatment process influences. Regarding baseline treatment expectations, level of maternal psychopathology at baseline was negatively correlated with parents' expectations about the potential success of the program, indicating that parents in families with more troubled mothers expected the intervention to be less successful. The lack of association between father psychopathology and parent expectations may be related to the fact that all of the treatment families were families in which the fathers were known to be troubled, but within which the mothers' level of functioning was more variable. Thus, some families had two parents who were highly troubled, whereas others had a mother who was relatively intact. Therefore, the correlation of mother but not father psychopathology with pretreatment parent expectations does not necessarily mean that father psychopathology was irrelevant, but may instead be a reflection of a greater level of difficulty among families in which both the mother and the father experienced significant psychological problems. This explanation would be consistent with other research (e.g. Merikangas, et al., 1985; Williams, 1987), which has identified an additive if not synergistic effect on family functioning when both parents are psychologically troubled.

Parent expectations at baseline were also associated with the initial frequency of positive child behaviors, indicating that parents whose child exhibited positive behaviors at a higher frequency were more optimistic and hopeful about the potential success of the intervention for addressing child behavior problems. This expectation is consistent with research showing that initial levels of child compliance are positively associated with subsequent success in a parent training program (Holden, Lavigne, & Cameron, 1990). Interestingly, neither child behavior nor parenting style at baseline was correlated with therapist pretreatment expectations, despite the fact that the intervention was designed to target both child and parenting behaviors for change. Instead, therapist expectations were positively associated with family socioeconomic resources, indicating that therapists' impressions of families' ability to benefit from the intervention were based primarily on the financial, educational, and occupational status of the parents. This expectation on the part of therapists is also supported by the parent training literature, wherein family socioeconomic characteristics have been associated with completion of and speed of progress in treatment (Holden, et al., 1990), with level of positive change in parenting practices (Dumas & Wahler, 1983), and with child outcome (Webster-Stratton, 1985) in parent training interventions. In addition, it should be noted that family resources were positively associated with mid-treatment level of prosocial child behavior in the current treatment sample.

Both mother and father psychopathology were observed to be associated with parents' reported satisfaction with the intervention program and expectations for continued progress. Thus, higher levels of both maternal and paternal psychopathology were associated with less treatment satisfaction and more negative expectations about subsequent progress among participating parents. In contrast, therapists' satisfaction and expectations were observed to be more exclusively tied in with level of paternal psychopathology, despite the fact that only a subset of fathers in the study actually participated in the intervention. In examining pretreatment

characteristics associated with parent investment, mother and father psychopathology were not found to be significantly related to early or cumulative levels, although the correlations approached significance. Early parent investment was somewhat negatively related to level of authoritative parenting, which is consistent with research showing that impaired parenting at pretreatment is associated with higher levels of maternal resistance (Stoolmiller, Duncan, Bank, & Patterson, 1993). Parent investment at all time points was also positively correlated with baseline positive child behavior, indicating that parents of children who were initially more prosocial in nature were more highly invested in the intervention. Parent investment during the second half of the intervention was significantly correlated with father psychopathology, suggesting that paternal distress had a disruptive influence during Phase 2 of the intervention. This finding is particularly important in light of the hypothesis that the observed decrease in parent investment during the second half of the protocol was related to the greater focus on problems in individual parent and marital functioning. That level of father psychopathology was associated with Phase 2 investment provides further support for this explanation, as families in which the father was more troubled (e.g. more antisocial, with more severe alcoholism, and/or more depressed) would be expected to have been more resistant to exploring and addressing personal and marital problems.

Interplay Among Treatment Process Characteristics and Treatment Outcomes

The examination of treatment expectations, investment, and satisfaction in relation to one another and to treatment outcome provided substantial support for the hypothesized role of these characteristics as interrelated aspects of the treatment process which influence treatment success. Parent expectations at pretreatment were strongly associated with negative child behavior at mid-treatment. In contrast, no relationship was found between pretreatment therapist expectations and the outcome measures, although the correlation with authoritative parenting approached

significance. Thus, parents' expectations were hypothesized to have had a more significant influence on the early treatment process than did therapists'. This hypothesis was subsequently supported by the finding that pretreatment parent expectations were associated with early parent treatment investment, whereas therapist expectations were not. Further, parent treatment investment was observed to mediate the relationship between pretreatment expectations and negative child behavior, indicating that parent expectations affected child outcome at mid-treatment indirectly, via their influence on parent investment. This also indicates that parent expectations prior to treatment did not in and of themselves predetermine parents' success in the intervention.

Together, these findings are consistent with other reports demonstrating that clients' early attitudes about a treatment program are associated with certain aspects of treatment outcome (Bloch, et al., 1976; Bowden, et al., 1980; Collins & Hyer, 1986), and that this association can be accounted for by the impact of pretreatment expectations on subsequent investment in an intervention (Bandura, 1977, 1989; Burling, et al., 1989; Elliott, 1986; Kazdin, 1981; Wolf, 1978). However, the present data are at odds with earlier research that has demonstrated a relationship between therapist pretreatment expectations and subsequent treatment process and outcome characteristics (Baekeland & Lundwall, 1975; Duckro, 1991; Martin & Sterne, 1975); therapist expectations in the present study were found to be only marginally associated with change in parenting at mid-treatment, and essentially unrelated to early parent investment, or to parent or therapist satisfaction ratings. This disparity in findings may be attributable to the fact that some of the other research examined therapist expectations as a predictor of premature treatment termination. In the current work, pretreatment expectations were not examined among treatment drop-out families; only families who completed the protocol were included in analyses. Further, these findings involving parent and therapist expectations must be viewed as extremely

tentative because of the amount of missing data that needed to be imputed. However, the observation of similar trends when these relationships were also examined within the subset of data which was not estimated lends additional support to the validity of these results.

As anticipated, parent satisfaction and expectations at mid-treatment, termination, and follow-up were significantly associated with one another, indicating that parents who were more satisfied with treatment were also more hopeful that they would experience continued improvement as a result of the intervention. Similarly, therapists who were more satisfied with families' progress at mid-treatment and termination expected that observed changes would continue over time. An examination of the roles of parent and therapist satisfaction as treatment process characteristics indicated that both parent and therapist satisfaction ratings, which included expectations that the intervention would continue to be effective, were significantly correlated with one another, and with changes in positive child behavior, negative child behavior, and authoritative parenting at most time points. Thus, parents and therapists who reported higher levels of overall satisfaction with the treatment generally perceived more frequent positive behavior and decreased negative behavior in the target child, as well as a more authoritative parenting style among participating mothers and fathers.

Parent and therapist satisfaction ratings were also associated with level of parent treatment investment. However, neither satisfaction nor investment were predictive of one another with earlier levels of these indices controlled. Two possible explanations for this are offered. One is that parent investment and parent and therapist satisfaction did not change significantly between the time points at which they were measured, thereby making the earlier and later indices of these essentially redundant. However, this was found to be true only for the satisfaction ratings, which were consistent from mid-treatment to termination. In contrast, a significant difference was found between Phase 1 and Phase 2 parent investment, with investment dropping overall during Phase

2 of the program. An alternative explanation for the failure of mid-treatment satisfaction ratings to predict parent treatment investment is that the decrease in Phase 2 investment was more attributable to pre-determined, protocol-imposed changes in the intervention program than to previous parent investment. In this regard, Phase 2 of the protocol involved a shift in the nature and frequency of therapeutic contacts with the families, as the intervention moved from intensive weekly sessions primarily focusing on targeted child behaviors and parenting practices, to bi-weekly meetings which also targeted parent communication and problem-solving patterns. Anecdotal accounts from therapists and supervisors involved in the program suggest that this transition was sometimes a difficult one for families (e.g Nye, 1992), because the protocol purposely deviated from its exclusive parent training approach to also address what were often more chronic, problematic, and affectively charged marital/family issues. Because the satisfaction ratings made by parents and therapists at mid-treatment were based on their feelings regarding the previous child-focused work, these ratings would not then necessarily be directly predictive of parents' subsequent reactions to and investment in the marital problem-solving component which followed. Thus, the time points at which satisfaction ratings were generated may have precluded an accurate account of variations in satisfaction during the second phase of the intervention. In fact, there is evidence that treatment satisfaction may actually progress in a curvilinear trend during successful interventions (Tracey, 1989). Within this framework, satisfaction drops during the middle of treatment as more difficult issues are addressed, and rises again by termination once these issues have been successfully processed. These possible fluctuations could not be observed in the current work, as satisfaction ratings were not generated during the course of the marital problem-solving phase.

Although not identified as a unique predictor of changes in parent and therapist satisfaction ratings from mid-treatment to termination, parent treatment investment was predictive

of satisfaction at the mid-treatment time point. Further, this association between parent investment and subsequent satisfaction was maintained when pretreatment parent expectations were controlled, indicating that parent investment was directly related to mid-treatment satisfaction. This is consistent with the association between investment and outcome, whereby more positive outcomes were observed to be predicted by higher levels of investment in the intervention. In this regard, changes in negative child behavior and authoritative parenting were consistently associated with parent treatment investment, such that higher levels of investment were predictive of greater improvement in negative behavior and parenting. Further, the finding that early investment was also a significant predictor of later levels of negative child behavior and authoritative parenting suggests that parent treatment investment represents a true influence on treatment outcome, rather than a result of therapists attributing greater investment to families showing improvement during treatment. Increased positive child behavior at termination was also associated with greater prior parent investment, when pretreatment positive behavior was controlled. However, level of parent investment did not predict positive child behavior at mid-treatment or follow-up, suggesting that other mediating mechanisms may have come into play at these time points.

Overall, then, parent treatment investment was identified as a significant predictor of improvement in child behavior and parenting. Further, the strong association between parent investment early in treatment with improvement in negative child behavior and authoritative parenting at later time points indicates that the influence of investment on outcome is quite robust. In addition, exploratory analyses identified parent investment as a moderator of the influence of pretreatment child and parenting characteristics on subsequent outcomes, with highly invested families demonstrating treatment gains that were relatively independent of pretreatment level of child behavior and parenting (see Appendix H).

Treatment process characteristics as proximal influences on outcome. The literature on parent investment in parent training interventions has shown that investment is not only associated with treatment outcome, but that this characteristic of the treatment process is directly predictive of changes in child behavior (e.g. Nye, et al., in press) and parenting (e.g. Patterson & Stoolmiller, in press) when pretreatment parent and family influences on outcome are controlled. When considered as a single construct representing treatment process characteristics, treatment investment, expectations, and satisfaction were found to predict changes in both negative child behavior and authoritative parenting at termination, after the contributions of pretreatment level of child or parent functioning and baseline parent psychopathology were taken into account. Further, the influence of parent psychopathology on outcome was mediated by treatment process characteristics, whereby the treatment process construct was observed to account for the relationship between parent psychopathology and parenting outcome. Thus, treatment process characteristics may be viewed as directly influencing treatment outcome.

The failure of treatment process characteristics to predict positive child behavior at termination beyond the influence of pretreatment child behavior and parent psychopathology may be associated with parents' relatively greater investment in reducing antisocial child behavior, than on enhancing prosocial behaviors during the first half of the intervention. As noted earlier, parents who were more invested in the protocol were those whose child exhibited more positive behaviors at baseline. Presumably, then, these parents would be less concerned with further increasing positive behaviors than on reducing targeted negative behaviors. In fact, an examination of the partial correlations of investment and satisfaction ratings with child outcome indicates stronger associations with changes in negative child behavior at mid-treatment. In contrast, only therapist satisfaction was significantly correlated with mid-treatment positive child behavior, suggesting that parents were generally more concerned with the reduction of problem

behaviors than the promotion of positive behaviors earlier on. However, cumulative parent investment and termination parent and therapist satisfaction ratings were all associated with positive child behavior at the end of the intervention, suggesting relatively greater attention to prosocial behaviors by parents during the latter half of the intervention. Therefore, the inclusion of both early and late satisfaction and investment ratings in the treatment process construct may have masked a possibly greater influence of Phase 2 process characteristics on prosocial positive behavior at termination.

Implications for the treatment process model. The analyses conducted herein were designed to test selected components of a conceptual treatment process model (see Figure 1). This model proposes a chain of influence among parent and therapist expectations, parent treatment investment, and parent and therapist satisfaction as determinants of treatment outcomes, with pretreatment parent and family characteristics identified as more distal and indirect predictors of changes in child behavior and parenting. These analyses generally confirm the expectations that treatment process characteristics would be directly associated with changes in positive child behavior, negative child behavior, and authoritative parenting among families completing the M.S.U. Multiple Risk Child Outreach Program. These analyses also generally confirm the hypothesized associations among parent and therapist expectations, parent and therapist satisfaction, and parent treatment investment, as parent expectations were observed to affect outcome via their influence on parent investment, and parent satisfaction and expectations for continued success in treatment were found to be positively associated with one another and with level of parent treatment investment. Although changes in treatment investment and satisfaction ratings were not significantly predictive of one another during the second half of the intervention, it is hypothesized that changes in the intervention protocol during Phase 2 may have precluded an accurate account of the interplay between parent satisfaction and investment.

Findings also lend support to the proposed relative contributions of pretreatment parent and family factors and treatment process characteristics in accounting for changes in child behavior and authoritative parenting. Among the current sample of families, treatment process characteristics made a unique contribution in the prediction of improved negative child behavior and authoritative parenting at termination, beyond the influence of pretreatment parent psychopathology. In fact, parent psychopathology was not significantly associated with termination level of negative child behavior. Further, treatment process characteristics accounted for the relationship between parent psychopathology and termination authoritative parenting, as baseline level of parent psychopathology was observed to have only an indirect impact on change in authoritative parenting at the end of the intervention, through an influence on treatment process characteristics. Thus, level of parent trouble impaired improvement in parenting by disrupting the treatment process.

Overall, then, this study supports a model of treatment wherein parent treatment investment, parent and therapist expectations, and parent and therapist satisfaction are interrelated aspects of the treatment process which account for variability in outcomes among parents participating in this early intervention program. In contrast, pretreatment characteristics such as parent psychopathology and family socioeconomic resources are more distal predictors of outcome which may, in part, influence outcome through their disruption of the treatment process.

Characterizing the flow of treatment. In integrating these various findings to characterize the interplay among pretreatment and treatment process influences within the current intervention, one must first begin with parent pretreatment expectations, which were associated with level of mother psychopathology and with baseline frequency of positive child behaviors. These initial parent expectations subsequently influenced the extent to which parents initially invested in the intervention protocol, with lower expectations associated with less investment. However,

pretreatment expectations did not directly account for changes in child behavior during the protocol. Instead, parent treatment investment predicted decreased negative child behavior and increased authoritative parenting at mid-treatment. Further, these improvements in child behavior and parenting were positively associated with satisfaction and positive expectations expressed by parents and therapists at mid-treatment.

Regarding processes occurring during the second half of the intervention, an overall drop in parent treatment investment was observed from pretreatment to termination, while parent and therapist satisfaction levels remained consistent across time. Baseline level of father psychopathology was implicated as a disrupter of parent investment during this second phase of treatment, indicating that families in which the father was more disturbed were less likely to demonstrate adequate investment during the second phase of treatment. Thus, the second half of treatment, in which salient marital and individual problems were addressed, appears to have been particularly critical for successful child and parenting outcomes by the end of the intervention. In accounting for overall change from pretreatment to termination, then, treatment process characteristics may legitimately be viewed as the more proximal contributors to observed improvement in negative child behavior and authoritative parenting, with pretreatment characteristics such as parent psychopathology affecting outcome through their influence on the treatment process. In contrast, treatment process characteristics did not seem to have the same level of influence on positive child behavior.

Unique Aspects of the Study

The parent training literature has focused primarily on clinically accessed populations, in which participating families have actively sought help in addressing problems of antisociality and aggressiveness in their children. Thus, identification of these samples has typically been determined by characteristics of the children rather than of the parents. In contrast, the families

involved in the current study were selected because of evidence of alcoholism in the fathers, and were specifically identified and recruited through court records of DWI arrests. Therefore, these families were reached as part of a community-based outreach protocol identifying children at particularly high-risk for behavior problems, and are therefore anticipated to represent a more population-based sample rather than one that is self-selected by virtue of seeking outside intervention for problem child behaviors.

Although the intervention was implemented with a non-clinically generated sample of children, there is ample evidence that participating families were particularly dense in child risk for later alcohol and drug problems, by virtue of a high rate of antisociality and multiple parent and family stressors (Fitzgerald, Zucker, & Yang, 1995; Zucker, Fitzgerald, & Moses, 1995; Zucker, et al., 1988). Reports on families in the larger parent project have documented substantial financial and social disadvantage, significant marital conflict and aggression, and high rates of parent distress including depression, antisociality, and other drug abuse within this community-based sample. In fact, this subpopulation of alcoholic men has been shown to have more antisocial comorbidity than the general population of alcoholics, as indicated in part by their drunk driving convictions. Moreover, other analyses have shown that approximately 60% of these men may be classified as Type II (antisocial, early onset) alcoholics under Cloninger's (1987) typology (Nye, et al., in press; Zucker, Ellis, & Fitzgerald, 1994) Thus, the group of alcoholic men recruited through the outreach protocol is most representative of the subset of alcoholics who are the most damaged, with the most antisocial comorbidity, the earliest onset of alcohol dependence, and with the greatest likelihood that substance abuse will develop among their offspring (Zucker, Fitzgerald, & Moses, 1995). Further, although these families were not explicitly recruited because of level of child behavior problems, a substantial subset of target children in the larger parent project have been observed to display a cumulation of internalizing

and externalizing behaviors that is significantly elevated relative to other children their age (Jansen, Fitzgerald, Ham, Zucker, in press).

The present study is also somewhat unique with regard to the scope and underlying orientation of the intervention protocol. Different from more traditional parent training approaches (e.g. Dumas & Wahler, 1983; Webster-Stratton, 1984), this program was modeled after Patterson's Social Learning Therapy (e.g. Patterson, et al., 1982) and incorporated a marital problem-solving component in the treatment regimen rather than adhering to a strict child-focused paradigm. Further, in contrast to work with clinically-identified populations of children, the focus of the present work was purposely on ways to enhance parenting techniques and child-rearing practices in order to prevent later child behavior problems. Thus, although sessions did address parents' concerns about specific child behaviors, an equally visible goal was to assist parents in learning how to manage these early problem behaviors in the hopes of reducing the risk that they would develop into more severe difficulties over time. The fact that both child behavior and parenting style were observed to change during the course of the intervention provides initial support for this preventative approach.

Methodological Limitations

Although this research provides evidence that such process characteristics as treatment investment, expectations, and satisfaction are important in accounting for variability in outcome among participants in a parent training intervention, several methodological issues mandate that these results be interpreted with some caution. The small sample size, although typical for treatment-based studies, not only precluded a direct test of the full treatment process model, but also limits the generalizability of the findings. Further, this limitation is compounded by the number of analyses conducted, which reduces the overall power of the results. However, it should be noted that the intent and effect of these analyses was generally to maximize the

potential influence of non-treatment process variables, prior to testing treatment process characteristics as predictors of outcome. Further, the observation that power was generally within the desired parameters (Cohen, 1987; 1992) despite the limited number of participants suggests that the findings reflect real rather than random relationships.

Another factor limiting the generalizability of these findings is the restricted sample studied herein. The treatment sample was quite homogenous with regard to general demographic characteristics, as well as the specific inclusion criteria which limited the sample to Caucasian, intact families with an alcoholic father and a preschool-aged male target child. Given the narrow range of variability among these families, it is not possible to speculate whether or how the observed trends in the current work might play out differently within other treatment samples. In addition, the current sample is further limited by self-selection, representing only those families who not only agreed to participate in the intervention protocol, but who also completed it. As such, they may represent a more intact and less troubled sample of families with potentially fewer personal, marital, or other difficulties. In fact, other analyses identified a higher level of marital aggression among families within the larger treatment sample ($\underline{n}=104$) who terminated their participation in post-test data collection (Nye, 1992). However, even within this more selective sample, it is noteworthy that such variability in outcome was systematically related to treatment process characteristics.

Also worthy of comment in the present work is the cognitive interdependence of the treatment-related variables that were studied. Parent treatment expectations and satisfaction, and parent treatment investment cannot be viewed as mutually exclusive constructs which necessarily represent unique aspects of the treatment process. Similarly, therapist treatment expectations and satisfaction are also not independent of one another, nor separate from therapists' ratings of parent treatment investment. More likely, these process characteristics are intimately connected

with one another, and with perceived changes in the outcome measures. Thus, it is not possible to conclude that any one of these characteristics necessarily drives or determines any other process or outcome aspect of the treatment, despite the longitudinal relationships that have been described.

Another methodological concern in this work is a potential criterion contamination bias, whereby parents' and therapists' ratings of outcome may have been influenced by their experiences of the treatment process. For example, parents who initially had more optimistic expectations about the intervention may have reported more positive outcomes, simply as a confirmation/affirmation of those expectations. However, it should be noted that it was level of parent treatment investment -- that was rated by therapists -- rather than prior parent expectations that was found to be predictive of child and parent outcome. Another possible bias may be that parents who were more invested in treatment were then more motivated to perceive change in the targeted behaviors, and therefore reported more positive outcomes than did less invested parents. Similarly, therapists also may have been more likely to report improved child behavior and parenting in families where the parents were perceived to be highly motivated and invested. Conversely, therapists might have attributed greater investment for families in which parenting style and child behavior appeared to be improving. One way to address this latter issue was to examine the extent to which early ratings of parent investment were associated with child and parenting outcomes at termination. Presumably, these earlier ratings would be more independent of perceived changes in child behavior at the later time point than at the more proximal one. The finding that parent investment scores for the first half of treatment were also significantly associated with changes in negative child behavior and authoritative parenting at termination indicates that this particular confound may not have been a problem. In further support of this is the finding that therapist ratings of parent investment over the course of treatment were

significantly associated with level of negative child behavior at the six-month follow-up. Some safeguards against other potential biases included the use of an average child behavior score based on ratings from multiple sources, the validation of initial therapist ratings of parenting style against independent observations, and reliability checks of therapists' investment ratings. However, the potential and actual biases involved when relying on treatment participants' ratings of outcome have been well-documented (Furey & Basili, 1988; Johnson & Christensen, 1975; Patterson, Cobb, & Ray, 1973; Patterson & Chamberlain, 1988; Patterson, et al., 1993; Weist, Ollendick, & Finney, 1991), and the most stringent safeguard against these potential criterion contamination biases would clearly be to incorporate more objective longitudinal ratings of parent treatment investment, child behavior, and parenting.

The issue of degree of change in child behavior and parenting must also be considered. Treatment outcome research has begun to focus on the importance of assessing the extent to which targeted behavior change is clinically significant, and not merely statistically significant (Jacobson & Truax, 1991; Speer, 1992). Under this model, the success of interventions would not be measured solely by examining relative change in behavior from baseline levels, but would also be determined by the number of participants whose symptoms are reduced to a normal, non-clinical level as a result of treatment. However, unlike most parent training studies, children in the present work were not recruited for the intervention because of a high level of problematic behavior. Instead, these children were identified for early intervention services because they were considered to be at-risk for the subsequent development of problem behaviors by virtue of their membership in an alcoholic family. Therefore, level of clinically significant change is not yet relevant in this intervention, as the program was designed to prevent rather than correct oppositional behavior problems among the target children later in life. Only continued study of these children will reveal whether the program was ultimately successful as a prophylactic

intervention, and whether later child outcomes are consistent with the variations in outcome noted in the current work.

Summary and Future Directions

The present work is consistent with a small but growing body of literature on parent training interventions that has emphasized the primacy of client investment and other treatment process characteristics as predictors of treatment effectiveness. The work is a substantial extension upon and refinement of earlier research (Nye, et al., in press) which identified maternal treatment investment as a significant predictor of child behavioral outcome among families participating in the M.S.U. Multiple Risk Child Outreach Program. In the present study, treatment investment, satisfaction, and expectation ratings of mothers and fathers who participated in the program were examined as predictors of change in child behavior and authoritative parenting. In addition, therapists' level of satisfaction and expectations were examined, with the expectation that these treatment process characteristics would be also be associated with treatment outcome. Analyses showed that parent treatment investment, and parent and therapist satisfaction and expectations, are related elements of the treatment process that are differentially associated with change in child behavior and authoritative parenting reported at the end of the parent training intervention. Further, the influence of these process characteristics does not appear to be merely additive to the impact of pretreatment characteristics on outcome; under some circumstances it mediates the influence of baseline parent functioning on subsequent treatment success.

Implications for treatment. These findings indicate that variability in treatment outcome is best accounted for by what goes on during treatment, and that such pretreatment characteristics as parent psychopathology, family socioeconomic resources, level of child functioning, and authoritative parenting style are of limited utility in predicting which families will experience

success as a result of parent training interventions. Although some of these baseline variables may be potential disrupters of treatment, they generally do not in and of themselves predetermine better or worse treatment outcomes. Instead, researchers and therapists alike would do well to attend to aspects of the treatment process, in order to understand why some families are more successful than others during parent training interventions. The current work provides evidence that only parents who are observed to be more actively engaged during treatment and who follow-through with homework assignments will show improvement in their parenting skills and, as a result, will experience increased positive child behavior and decreased negative child behaviors. These parents are also likely to report higher levels of satisfaction with the program, and to expect that the intervention will continue to promote positive change. Similarly, therapists who experience parents as being invested in treatment will also report high levels of satisfaction and will anticipate that these families will continue to improve over time. Thus, parent investment and parent and therapist satisfaction during the initial stages of therapy may serve as markers regarding potential outcome, and intervention efforts must therefore include explicit attempts to address deficits in parent motivation early on. However, there is also evidence that continued investment and motivation is necessary throughout treatment, particularly when more difficult personal and marital issues are addressed. This implies that successful interventions may require continual monitoring of and ongoing attention to parent investment during the course of treatment.

In applying these findings to a clinical setting, several approaches are suggested. First, therapists must be actively involved in addressing not only targeted child behaviors, but also parent attitudes and characteristics which may undermine treatment. Given the association between pretreatment parent expectations and subsequent investment, initial sessions with parents might need to explore and address possible reservations regarding the utility of the program, and

to then negotiate a therapeutic contract that gives the parents some sense of ownership regarding the treatment. Further, to the extent that initial levels of positive child behavior may increase parents' investment in child-focused interventions, early work with families may need to focus on ways to enhance the parent-child relationship and increase the frequency of positive exchanges between parent and child. In addition, the disruptive impact of parent psychopathology to the treatment process indicates that symptom reduction in the parents is a worthwhile goal at all stages of an intervention. As noted earlier, parents may see the shift of focus from child behavior problems to individual parent and marital difficulty as unnecessary and/or aversive. Therefore, embedding this latter type of work within the larger fabric of the intervention may help to reduce parents' reactive resistance. Finally, evaluating parent satisfaction with and reactions to the treatment process during the course of an intervention may assist therapists in building on positive experiences and preventing more negative ones.

Further research is necessary to examine the potential interaction of other pretreatment and treatment process characteristics in accounting for variations in parent training outcome. Other relevant pretreatment characteristics include the initial age of the target child (Dishion & Patterson, 1992), parent age (Nye, 1992) and negative life experiences (Webster-Stratton, 1985; Webster-Stratton & Hammond, 1990), as well as the level and quality of social support available to parents (Dumas & Wahler, 1983). Additional potential pretreatment predictors of outcome which would not have been relevant to the current sample but which have also been associated with treatment success are single parent status (Webster-Stratton, 1985; Webster-Stratton & Hammond, 1990), gender of the target child (Furey & Basili, 1988), and ethnic background of the family (Holden, et al., 1990).

Regarding other treatment process predictors of outcome, therapist socioeconomic, demographic, personality, and professional characteristics may be worthy of consideration.

Although there is conflicting data about the extent to which therapist characteristics influence treatment success, there is some evidence that these may account for a modest but statistically significant percentage of the variance in treatment outcome (e.g. Crits-Christoph & Mintz, 1991; Lambert, 1989: Nelson & Taylor, 1993). Patterson and his colleagues (Chamberlain, Patterson, Reid, Kavanaugh, & Forgatch, 1984) found that level of therapist experience was associated with aspects of the treatment process, as novice therapists encountered higher levels of resistance from parents during sessions than did more experienced therapists. However, therapist characteristics may have more of an impact on the process than on the outcome of therapy (e.g. Gomes-Schwartz, 1978; Howard, Orlinsky, & Perilstein, 1976), and therapist experience alone may not determine treatment effectiveness (e.g. Stein & Lambert, 1984). Orlinsky and Howard (1980) also suggest that therapist characteristics are not systematically associated with outcome, but may instead influence the range of clients with whom a therapist is effective. Similarly, Howard, Orlinsky, and Perilstein (1976) have differentiated between "relational" and "instrumental" aspects of therapy, and suggest that therapist personality characteristics are more associated with the latter than the former. In this model, therapist characteristics are likely to influence clients' affective experiences during therapy, but not to significantly affect successful resolution of identified problems. Other research also suggests that therapist characteristics, like parent characteristics, may influence treatment outcome primarily via their impact on the treatment process. Specifically, this research has found an association between therapist personality and other characteristics and the quality of the therapeutic alliance, which in turn may affect clients' eventual success in therapy (Frieswyk, Allen, Colson, Coyne, Gabbard, Horwitz, & Newsom, 1986; Lambert, Shapiro, & Bergin, 1986; Luborsky, McLellan, Woody, O'Brien, & Auerbach, 1985; Nelson & Taylor, 1992). Type of therapeutic alliance has also been associated with whether clients complete or prematurely terminate treatment (Tryon & Kane, 1993).

Further research is also necessary to evaluate the interplay between pretreatment and treatment process characteristics over the course of parent training interventions. In examining the influence of parent treatment investment and parent and therapist satisfaction and expectation ratings on outcome, the present work used global, composite scores for these process constructs. However, investment, satisfaction, and expectations are likely to be multi-faceted and multiply-determined characteristics of the treatment process. In the present report, parent treatment investment scores were comprised of ratings on the parents' completion of homework assignments, and well as therapist observations of and reactions to parent behaviors within sessions. These latter ratings included the extent to which participating parents talked during the session, and were withdrawn or outgoing, open to new ideas, hostile or friendly toward the therapist, and resistant or facilitative within each session. In addition, the therapist reported on how she/he felt toward each parent, and how well s/he worked with each parent during the sessions. Although these various indices were determined to be statistically related (and were therefore combined into one composite investment score), it is possible that certain of these treatment investment indices were differentially associated with measures of pretreatment parent and family functioning and with change in child behavior and parenting. Other studies have suggested that homework compliance is a separate dimension of treatment investment (Patterson & Chamberlain, 1988) that is not necessarily related to within-session process characteristics (Nelson & Borkovec, 1989). There is also evidence that various aspects of parent engagement during sessions may be differentially associated with pretreatment parent and family functioning, with other aspects of the treatment process, and with treatment outcome. Patterson and Chamberlain (in press) differentiated between "I can't" and "I won't" statements from parents in response to therapists' interventions, and found that these statements represented two qualitatively different types of resistance associated with different pretreatment parent and family

characteristics. In this regard, "I can't" statements were associated with baseline depression and antisociality for both mothers and fathers, and father "I won't" statements were also related to paternal antisociality. Further, these two types of resistance were differentially predictive of therapists' feelings about the parents, with the number of sessions required before termination, and with the amount of session time spend discussing social learning topics. In interpreting these findings, the authors suggest that:

> the therapist's ability to persist in teaching key skills in the face of the expressed helplessness of the parent and the therapist's own increasing discouragement or dislike appears to account for much of the variance in the success of treatment (Patterson, Dishion, & Chamberlain, 1993, p. 67).

Interestingly, these researchers have also observed that within-session resistance ("I won't") is not necessarily detrimental to treatment, but may actually be an indicator that parents are actively engaged in the program (Patterson & Chamberlain, 1988). These authors propose that a moderate level of struggle between parents and therapists is a necessary precursor to change in parenting practices, but that resistance that is too extreme will result in less improvement in parenting and more poor outcomes.

The use of composite scores to represent parents' and therapists' global satisfaction in the present work also precluded an examination of whether there may be multiple components of treatment satisfaction that are differentially associated with pretreatment, treatment process, and treatment outcome characteristics. Some parents may have been quite satisfied with the child-focused aspects of the intervention but relatively dissatisfied with the marital problem-solving work, which might then have different implications for reported outcome. Parents' and therapists' reactions to and feelings about one another might also be separate process dimensions that uniquely contribute to both treatment investment and treatment outcome. Clearly, this would be consistent with the research linking therapeutic alliance with outcome (Frieswyk, et al., 1986; Lambert, et al., 1986; Luborsky, et al., 1985; Nelson & Taylor, 1992). Further, these various

aspects of treatment satisfaction may be associated with different pretreatment parent and family characteristics. In addition, the Patterson work demonstrates that direct observations of client and therapist behavior in treatment are important to understanding the treatment process (Chamberlain, et al., 1984).

There is also evidence that mother and father treatment process characteristics may have different implications for treatment outcome (e.g. Patterson & Chamberlain, 1994, and should therefore be examined separately. Such comparisons were not conducted in the present work, because of the protocol's restriction on the number of fathers who participated in treatment. However, it is interesting to note that father psychopathology was significantly correlated with parent investment during the second half of the treatment, such that families in which the fathers were more disturbed were less invested in the marital problem-solving work. Patterson and Stoolmiller (in press) report that changes in both maternal and paternal resistance influence changes in mothers' disciplinary strategies, indicating that fathers' behavior in treatment contributed to mothers' improvement in parenting. Patterson and Chamberlain (1992) observed that maternal psychopathology and socioeconomic disadvantage accounted for mothers' initial resistance in treatment, but were not related to maternal investment at the end of the intervention. In contrast, paternal psychopathology and disadvantage impaired fathers' investment throughout treatment.

These latter findings also indicate that variability in treatment process characteristics over time should be examined more extensively. Within the current treatment sample, overall parent investment was observed to drop from mid-treatment to termination. It was hypothesized that this decrease in investment was attributable to changes in the intervention protocol, whereby contacts with the parents were less frequent but potentially more confrontational and emotionally-charged. However, there was also some evidence that higher parent investment across the span

of the intervention had particular implications for child outcome, whereas early parent investment did not. Therefore, changes in treatment investment during the course of an intervention may be an important determinant of treatment success, and examining treatment process characteristics on a microcosmic, session-by-session level may be necessary in order to more clearly delineate how these are related to one another and to treatment outcomes over time. Patterson & Chamberlain (1994) have advanced a "struggle hypothesis", which proposes that successful interventions should be marked by an observable increase in parent resistance during the middle of treatment, followed by a significant reduction by termination once the resistance has been worked through (Patterson & Chamberlain, 1992). This has been supported by research indicating that parents who are successful in parent training exhibit a progressive increase in resistance from beginning to mid-treatment sessions, and a subsequent tapering off of resistance to termination (Stoolmiller, Duncan, Bank, & Patterson, 1993). Interestingly, this model seems to parallels Tracey (1989) identification of a curvilinear pattern in satisfaction levels among clients experiencing successful outcomes, whereby clients report less satisfaction during the middle of treatment as a result of dealing with more difficult issues, but then express increased satisfaction when these issues have been resolved by termination. The study of investment and satisfaction at two, rather than three, time points during treatment in the present work prevented this type of analysis.

Rosen and Proctor (1981) have suggested that treatment outcome is multifaceted, and is intimately imbedded within the treatment itself. They differentiate ultimate from instrumental and intermediate outcomes, and argue that each of these is an important characteristic of treatment. Ultimate outcomes are those which are the specific identified goals of an intervention. In contrast, instrumental outcomes are thought to contribute to other outcomes without additional intervention. In the present study, change in authoritative parenting style may be considered the

instrumental outcome which was expected to facilitate the attainment of the ultimate outcome -- the reduction and prevention of antisocial child behavior. Intermediate outcomes are client characteristics which are considered to be necessary for interventions to continue or to be successfully employed. In this case, levels of parent treatment investment, satisfaction, and psychopathology may all have been intermediate outcomes which contributed to the eventual attainment of initial changes in parenting and subsequent improvement in child behavior. Thus, this model proposes that outcomes occur throughout treatment. Therefore, process and outcome research must go beyond assessing client outcomes at termination and follow-up, and should recognize the "continuum of client change" that occurs during an intervention. In the present study, changes in child behavior, authoritative parenting, parent investment, and parent and therapist satisfaction and expectations were evaluated at mid-treatment, as well as at termination and, in some cases, follow-up. However, this work represents only one small step toward understanding the relationships among treatment processes and outcomes.

In expanding our knowledge of the multiple influences on treatment outcome in parent training interventions, one additional path merits exploration. In this and other studies, pretreatment parent and family characteristics have tended to be examined primarily as static states that may predispose families to better or worse outcomes at termination. But it is possible, if not highly likely, that some of these characteristics are also modified during the course of treatment and should therefore be considered not only as other indices of treatment outcome, but as more dynamic contributors to treatment success. This is supported by research on parent training programs with a relationship enhancement or marital problem-solving component. These studies have shown that parent training programs that address problems in both parenting practices and the marital relationship are more successful in reducing deviant child behavior than those which focus more exclusively on modifying parent disciplinary practices (e.g. Dadds, et

al., 1987; Sayger, Horne, & Glaser, 1993), suggesting that changes in marital satisfaction or adjustment may coincide with improved child outcome. Thus, marital conflict may not merely be a pretreatment disrupter variable, but also a more dynamic influence on child outcome over the course of an intervention. Similarly, the incorporation of "parent enhancement therapy" focusing not only on parenting behaviors but also addressing problems with parents' personal and marital adjustment, extra-familial relationships, and perceptions of the target child's behavior, has proven more effective than a more traditional parent training approach in changing child behavior and parenting practices (Griest, Forehand, Rogers, Breiner, Furey, & Williams, 1982). Thus, parent training programs that explicitly target parent individual and marital distress appear to promote more marked improvement in child behavior, suggesting that changes in these pretreatment parent characteristics during the course of the intervention may account for some of the variance in child outcome. Further, even more exclusively child-focused intervention protocols that do not systematically address problems in parent and marital functioning may nonetheless yield non-specific treatment effects, such that problems in parents' personal and/or marital adjustment are also alleviated during the course of treatment (e.g. Scovern, Bukstel, Kilman, Laval, Busemeyer, & Smith, 1980; Winans & Cooker, 1984). Therefore, in order to more adequately capture the interplay among parent, child, family, and treatment process characteristics in predicting treatment success, future research should examine whether changes in such pretreatment correlates of problem child behavior as parent distress and marital dissatisfaction occur during parent training interventions, and how these changes may be associated with treatment investment, satisfaction, and outcome.

APPENDICES

APPENDIX A

PEARSON CORRELATIONS BETWEEN PARENT PSYCHOPATHOLOGY VARIABLES AND PSYCHOPATHOLOGY CLUSTERS

APPENDIX A

Pearson Correlations Between Parent Psychopathology Variables and Psychopathology Clusters

Parent	Psychopathology Variables				Cluster
Father	LAPS	ASB	BECK	HAMW	FPROBS
LAPS		.54**	.35**	.39**	.80**
ASB			.25*	.22*	.71**
BECK				.31**	.68**
HAMW					.67**
Mother					
	LAPS	ASB	BECK	HAMW	MPROBS
LAPS		.55**	.30**	.29**	.75**
ASB			.37**	.29**	.78**
BECK				.24*	.68**
HAMW					.64**

Note. LAPS = Lifetime Alcohol Problems; ASB = Antisocial Behavior; BECK = Beck Current Depression; HAMW = Hamilton Worst-Ever Depression; FPROBS = Father Psychopathology cluster; MPROBS = Mother Psychopathology cluster

*$p < .05$. **$p < .01$.

APPENDIX B

PEARSON CORRELATIONS AMONG FAMILY DEMOGRAPHIC CHARACTERISTICS AND THE FAMILY RESOURCES CLUSTER

APPENDIX B

Pearson Correlations Among Family Demographic Characteristics and the Family Resources Cluster

	Demographic Variables				Cluster
	MOMED	DADED	INCOME	SES	RESOURCES
MOMED		.46**	.39**	.60**	.78**
DADED			.38**	.59**	.77**
INCOME				.51**	.73**
SES					.86**

Note. MOMED = Mothers' Education; DADED = Fathers' Education;

RESOURCES = Family Resources cluster (Income, SES, and Education).

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

APPENDIX C

FAMILY DEMOGRAPHIC AND PARENT PSYCHOPATHOLOGY CHARACTERISTICS OF THE TREATMENT SAMPLE

APPENDIX C

Family Demographic and Parent Psychopathology Characteristics of Treatment Sample (N=29)

Characteristic	M	SD
Family Demographics		
Income	$26,965	17,750
Socioeconomic Status	288	122
Mother Age (yrs)	29.2	4.6
Father Age (yrs)	32.1	5.6
Mother Education (yrs)	12.8	1.6
Father Education (yrs)	12.4	1.6
Mother Psychopathology		
Lifetime Alcohol Problems	9.6	1.7
Lifetime Antisocial Behavior	14.7	9.4
Current Depression (Beck)	4.7	3.8
Worst Ever Depression (Hamilton)	15.2	8.4
Father Psychopathology		
Lifetime Alcohol Problems	10.6	1.8
Lifetime Antisocial Behavior	24.1	14.3
Current Depression (Beck)	3.1	2.8
Worst Ever Depression (Hamilton)	14.2	8.3

Note. Socioeconomic status was measured by the Duncan TSEI2 index (Stevens & Featherman, 1981).

APPENDIX D

FACTOR LOADINGS OF OBSERVER IMPRESSIONS INVENTORY ITEMS IN THE AUTHORITATIVE PARENTING SCALE BASED ON PRINCIPAL COMPONENTS ANALYSIS

APPENDIX D

Factor Loadings of Observer Impressions Inventory Items in the Authoritative Parenting Scale Based on Principal Components Factor Analysis

Observer Impressions Item (item #)	Factor Loading
Expects child to behave nicely toward others (40a)	.61
Expects child to use good manners (40b)	.60
Is a positive and reinforcing parent (40c)	.77
Encourages/sees humor in aggressive/antisocial behavior (40d)	-.52
Is overly permissive, laissez-faire, negligent (41b)	-.63
Is erratic, inconsistent, haphazard (41c)	-.79
Is consistent, even-handed, firm when necessary (41d)	.86
Seems in good control of target child (41e)	.78
Seems to have little/no control of behavior of target child (41f)	-.77
Uses nagging or nattering to get compliance (41h)	-.52
Expresses anger/hostility while disciplining (41)	-.65
Friendly relations between parent and child (42a)	.77
Parent seemed distant/detached from child (42d)	-.59
Parent treats target child with respect (42k)	.71

APPENDIX E

PEARSON CORRELATIONS BETWEEN SELECTED REVISED BELSKY RATINGS OF PARENTING BEHAVIOR AND AUTHORITATIVE PARENTING ITEMS ON THE OBSERVER IMPRESSIONS INVENTORY FOR THE LARGER TREATMENT SAMPLE

APPENDIX E

Pearson Correlations Between Selected Revised Belsky Ratings of Parenting Behavior and Pretreatment Therapist Ratings on Authoritative Parenting Items on the Observer Impressions Inventory for the Larger Treatment Sample (n=43)

	Observer Impressions Inventory Item				
Belsky Parenting Dimension	Positive/Reinforcing (item 40c)	Laissez-faire (item 41b)	Erratic (item 41c)	Consistent (item 41d)	Angry (item 41j)
Positive Affect	.44**	.02	-.44**	.34*	-.34*
Positive Feedback	.26*	-.06	-.30*	.13	-.33*
Facilitates Self-Regulation	.42**	-.17	-.11	.14	-.30*
Ignores	-.15	.35*	.34*	-.19	.28

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

APPENDIX F

PEARSON CORRELATIONS BETWEEN PARENT AND THERAPIST SATISFACTION ITEMS AND PARENT AND THERAPIST EXPECTATIONS

APPENDIX F

Table 14

Pearson Correlations Between Parent Satisfaction Items and Parent Expectations at Post-tests

Parent Satisfaction Item	Parent Expectations Rating
Target child's behavior has improved	.45****
More positive feelings about target child	.35****
Therapist understands problems raised in sessions	.40****
Positive effect on parents' relationship	.35****
Positive effect on parent's relationship w/ target child	.48****
Positive effect on parent personally	.40****
Parent liked the therapist	.33****
Satisfied overall with the treatment	.42****

**$p < .01$, two-tailed. ***$p < .001$, two-tailed. ****$p < .0001$, two-tailed.

APPENDIX F

Table 15

Pearson Correlations Between Therapist Satisfaction Items and Therapist Expectations at Post-tests

Therapist Satisfaction Item	Therapist Expectations Rating
Target child's behavior has improved	.55****
More positive feelings about target child	.43**
Parents understood treatment directions/techniques	.50****
Positive effect on parents' relationship	.44**
Positive effect on mother's relationship w/ target child	.69****
Positive effect on father's relationship w/ target child	.42**
Positive effect on mother personally	.43**
Positive effect on father personally	.53***
Therapist liked the mother	.38**
Therapist liked the father	.27
Satisfied overall with the treatment	.68****

**$p < .01$, two-tailed. ***$p < .001$, two-tailed. ****$p < .0001$, two-tailed.

APPENDIX G

PEARSON CORRELATIONS AMONG MOTHER, FATHER, AND THERAPIST RATINGS OF CHILD BEHAVIOR, AND THE COMPOSITE CHILD BEHAVIOR SCORES

Appendix G

Table 17

Pearson Correlations Among Mother, Father, and Therapist Ratings of Negative Child Behavior, and the Composite Negative Child Behavior Score

	Child Behavior Rating			
Negative Behavior Measure	Mother	Father	Therapist	Composite
Pretreatment (Baseline)				
Mother	--	.53**	-.03	.59***
Father		--	.07	.69***
Therapist			--	.70***
Post-test 1 (Mid-treatment)				
Mother	--	.25	.37*	.70***
Father		--	.27	.72***
Therapist			--	.77***
Post-test 2 (Termination)				
Mother	--	.34*	.29	.79***
Father		--	.16	.69***
Therapist			--	.65***
Post-test 3 (Follow-up)				
Mother	--	.10	--	.77***
Father		--	--	.72***

*$p < .05$, one-tailed. **$p < .01$, one-tailed. ***$p < .001$, one-tailed.

APPENDIX H

TESTS OF PARENT TREATMENT INVESTMENT AS A MODERATOR BETWEEN PRETREATMENT AND POST-TEST CHILD BEHAVIOR AND PARENTING

Subsequent to regression analyses testing the contribution of parent treatment investment in predicting child behavior and parenting at the various post-test intervals, analyses were also conducted to examine whether investment moderated the relationship between pretreatment and post-test child behavior and parenting. This decision was based on earlier analyses with this treatment sample (Nye, et al., in press), which indicated that significant child behavior change occurred only among families in which the mothers were more highly invested in the intervention. In contrast, child behavior at post-test was observed to be essentially unchanged from pretreatment level among families with less-invested mothers. Similar trends were expected in the current work, with parent treatment investment anticipated to moderate the influence of pretreatment child behavior and authoritative parenting on subsequent child behavior and parenting, respectively. In particular, child and parenting outcomes were expected to be relatively independent of pretreatment child and parent functioning among highly invested parents, whereas the relationships between pretreatment and post-test levels of child behavior and parenting were expected to be stronger when parent investment was lower. Because of the small sample size, a more lenient 10% alpha level was used in initial analyses testing for an interaction between parent investment and pretreatment child or parent functioning.

Results

In order to test parent treatment investment as a moderator variable, interaction scores were generated for the product of parent investment and the individual pretreatment child and parenting means. The relevant interaction term was then entered at Step 3 of the regression equations, after pretreatment child behavior or parenting (Step 1) and early or cumulative parent investment (Step 2). These analyses identified Cumulative Parent Investment as a moderator variable for Positive Child Behavior and Authoritative Parenting at termination, and Negative Child Behavior at the six-month follow-up. Early Treatment Investment was not observed to

moderate any of the mid-treatment outcomes.

Regarding Positive Child Behavior at termination, an interaction between Cumulative Investment and pretreatment Positive Behavior was identified ($\Delta R^2 = .08$, $p = .09$) (Table 18). The nature of this interaction was examined by dividing treatment families into two groups, based on a median split on parents' Cumulative Treatment Investment scores. Separate regression analyses were then run for these two groups, examining pretreatment Positive Child Behavior as a predictor of Positive Child Behavior at termination. These analyses indicated a significant relationship between pretreatment and termination Positive Child Behavior for families who showed less investment in the intervention protocol ($R^2 = .53$, $F(1,12) = 13.56$, $p < .01$), while level of Positive Child Behavior at pretreatment was not predictive of Positive Child Behavior at termination for families who demonstrated a higher level of treatment investment ($R^2 = .02$, $F(1,13) = .22$, $p = $ n.s.). As shown in Figure 2, Positive Child Behavior at termination was consistently high among more invested families, regardless of initial level of positive behavior. In contrast, termination level of Positive Child Behavior for less invested families appears to have been linked with pretreatment positive behavior, with low initial positive behavior associated with lower positive behavior at termination. Thus, Cumulative Parent Treatment Investment moderated the impact of pretreatment Positive Child Behavior on Positive Child Behavior at termination for families in which parents demonstrated a higher level of investment throughout treatment, indicating that only more highly invested families experienced significant and consistent change in positive child behavior regardless of pretreatment level.

A significant interaction between pretreatment Negative Child behavior and Cumulative Parent Treatment Investment was also found for the prediction of Negative Behavior at follow-up ($\Delta R^2 = .09$, $p < .05$) (Table 19). Therefore, treatment families were again divided into two groups based on a median split of the Cumulative Investment score, and the relationship of pretreatment

Table 18

Hierarchical Regression Analyses of Parent Treatment Investment as a Moderator of Pretreatment Positive Child Behavior on Positive Child Behavior at Termination

Predictor Variable	B	SE B	*B*	R^2
Step One				.15**
Baseline Positive Child Behavior	.41	.19	.39**	
Step Two				.31***
Baseline Positive Child Behavior	.21	.19	.20	
Cumulative Treatment Investment	.37	.15	.45**	
Step Three				.39***
Baseline Positive Child Behavior	.26	.18	.24	
Cumulative Treatment Investment	.32	.15	.38**	
Baseline Behavior X Investment	-.12	.07	-.28*	

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

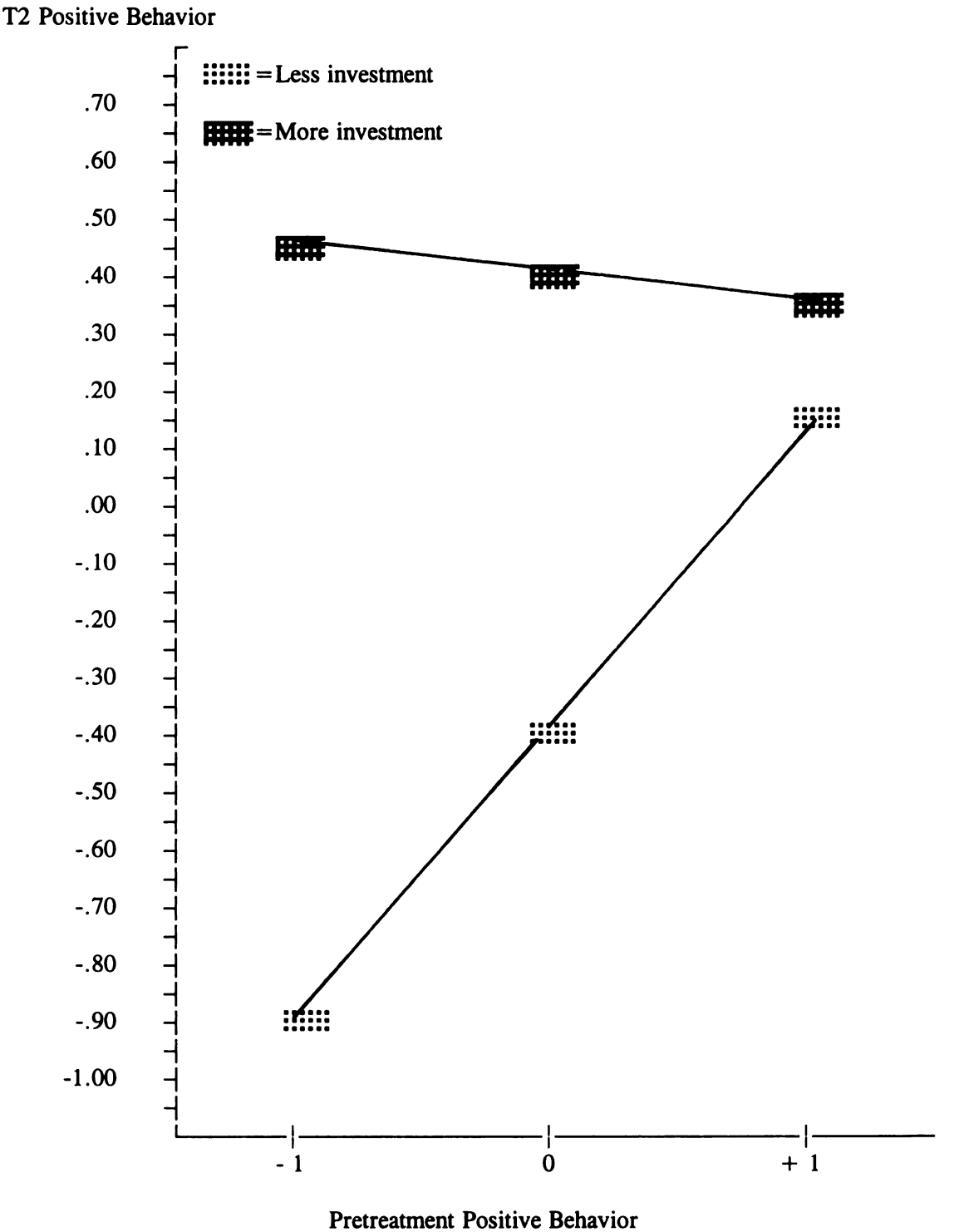


Figure 2. Relationship between Pretreatment and Termination (T2) Positive Child Behavior based on Cumulative Parent Treatment Investment.

Table 19

Hierarchical Regression Analyses of Parent Treatment Investment as a Moderator of Pretreatment Negative Child Behavior on Negative Child Behavior at Follow-up

Predictor Variable	B	SE B	*B*	R^2
Step One				.25***
Baseline Negative Child Behavior	.60	.20	.50***	
Step Two				.39***
Baseline Negative Child Behavior	.56	.18	.47***	
Cumulative Treatment Investment	-.34	.14	-.37**	
Step Three				.39***
Baseline Negative Child Behavior	.65	.18	.55***	
Cumulative Treatment Investment	-.37	.14	-.40**	
Baseline Behavior X Investment	-.18	.09	-.32**	

*p < .10. **p < .05. ***p < .01. ****p < .001.

to follow-up Negative Child Behavior was examined separately for each group. These regression analyses identified pretreatment Negative Child Behavior as a significant predictor of subsequent Negative Behavior at follow-up for the group of families showing lower cumulative treatment investment ($R^2=.37$, $F(1,12)=7.08$, $p<.05$), but not for those families where parent investment was higher across the span of the intervention ($R^2=.22$, $F(1,13)=3.79$, $p=$n.s.). The graph of these relationships (Figure 3) demonstrates a consistently lower level of negative behavior among more highly invested families, regardless of the target child's pretreatment behavior problems. In contrast, level of negative child behavior at follow-up among target children in less invested families was strongly associated with initial negative behavior, with more troublesome pretreatment behavior predicting more problematic behavior six months post-termination. Thus, families demonstrating greater investment in the intervention protocol were consistently able to effect improvement in negative child behavior by follow-up, independent of the initial level of negative behavior observed in the target child. For less invested families, child behavioral outcome was dependent upon pretreatment level.

Cumulative Treatment Investment was also observed to moderate the relationship between pretreatment and termination levels of Authoritative Parenting ($\Delta R^2=.04$, $p=.07$) (Table 20). When the relationship between Parenting at pretreatment and termination was examined separately for families showing differential levels of treatment investment, pretreatment Parenting was found to be predictive of Parenting at termination for less invested families ($R^2=.29$, $F(1,12)=4.82$, $p<.05$), but not for families who exhibited a greater level of investment throughout the intervention ($R^2=.05$, $F(1,13)=.72$, $p=$n.s.). As depicted in Figure 4, level of Authoritative Parenting at termination for highly invested families was relatively independent of pretreatment parenting, as parenting outcome for these families was consistently high regardless of initial parent functioning. Among less invested parents, authoritative parenting skills observed at the

Table 20

Hierarchical Regression Analyses of Parent Treatment Investment as a Moderator of Pretreatment Authoritative Parenting on Authoritative Parenting at Termination

Predictor Variable	B	SE B	*B*	R^2
Step One				.22***
Baseline Parenting	.60	.21	.47***	
Step Two				.65*****
Baseline Parenting	.35	.15	.28**	
Cumulative Treatment Investment	.81	.14	.68*****	
Step Three				.70*****
Baseline Parenting	.36	.14	.29***	
Cumulative Treatment Investment	.77	.14	.65*****	
Baseline Parenting X Investment	-.14	.07	-.21*	

*p < .10. **p < .05. ***p < .01. ****p < .001. *****p < .0001.

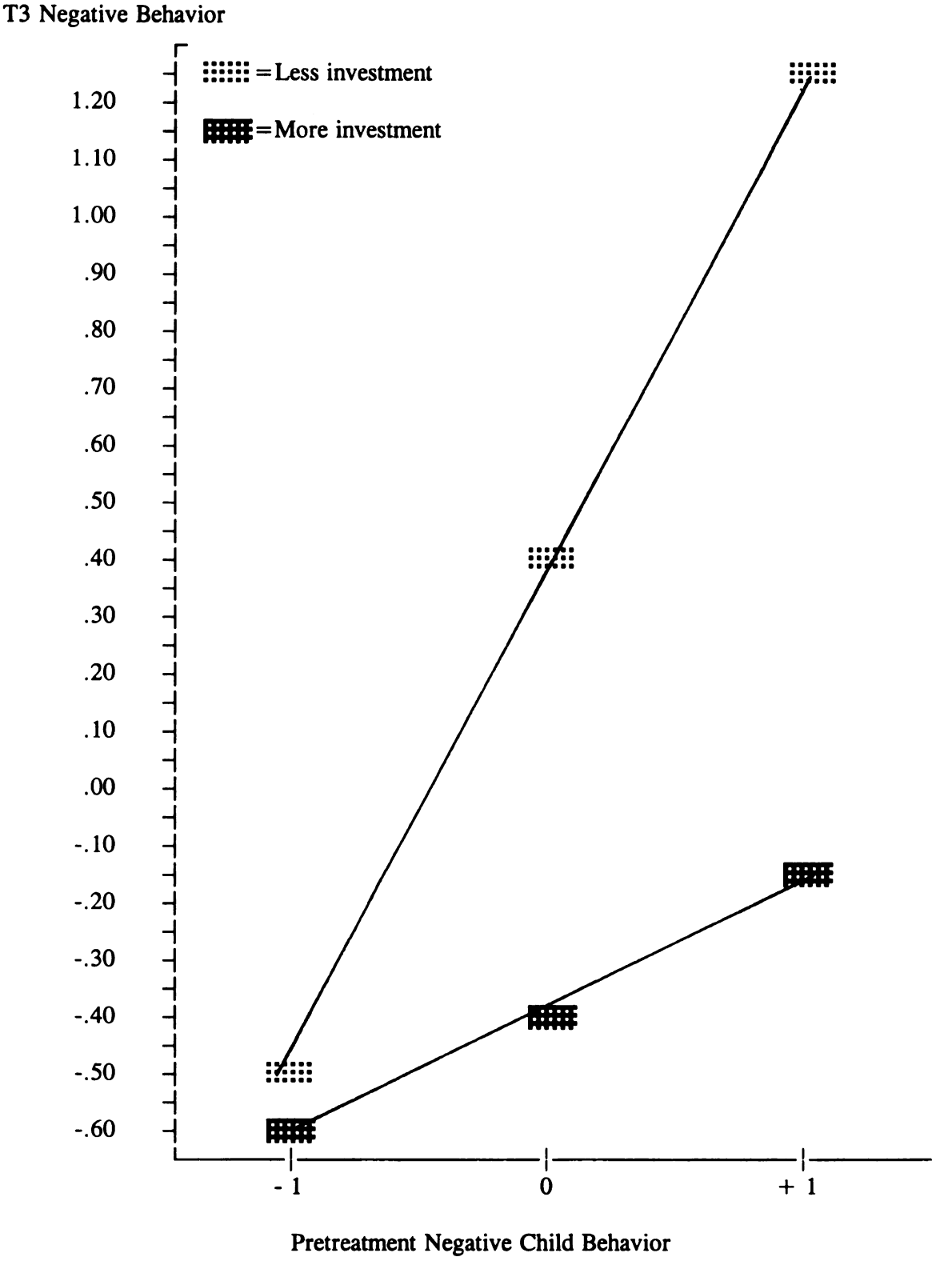


Figure 3. Relationship between Pretreatment and Follow-up (T3) Negative Child Behavior based on Cumulative Parent Treatment Investment.

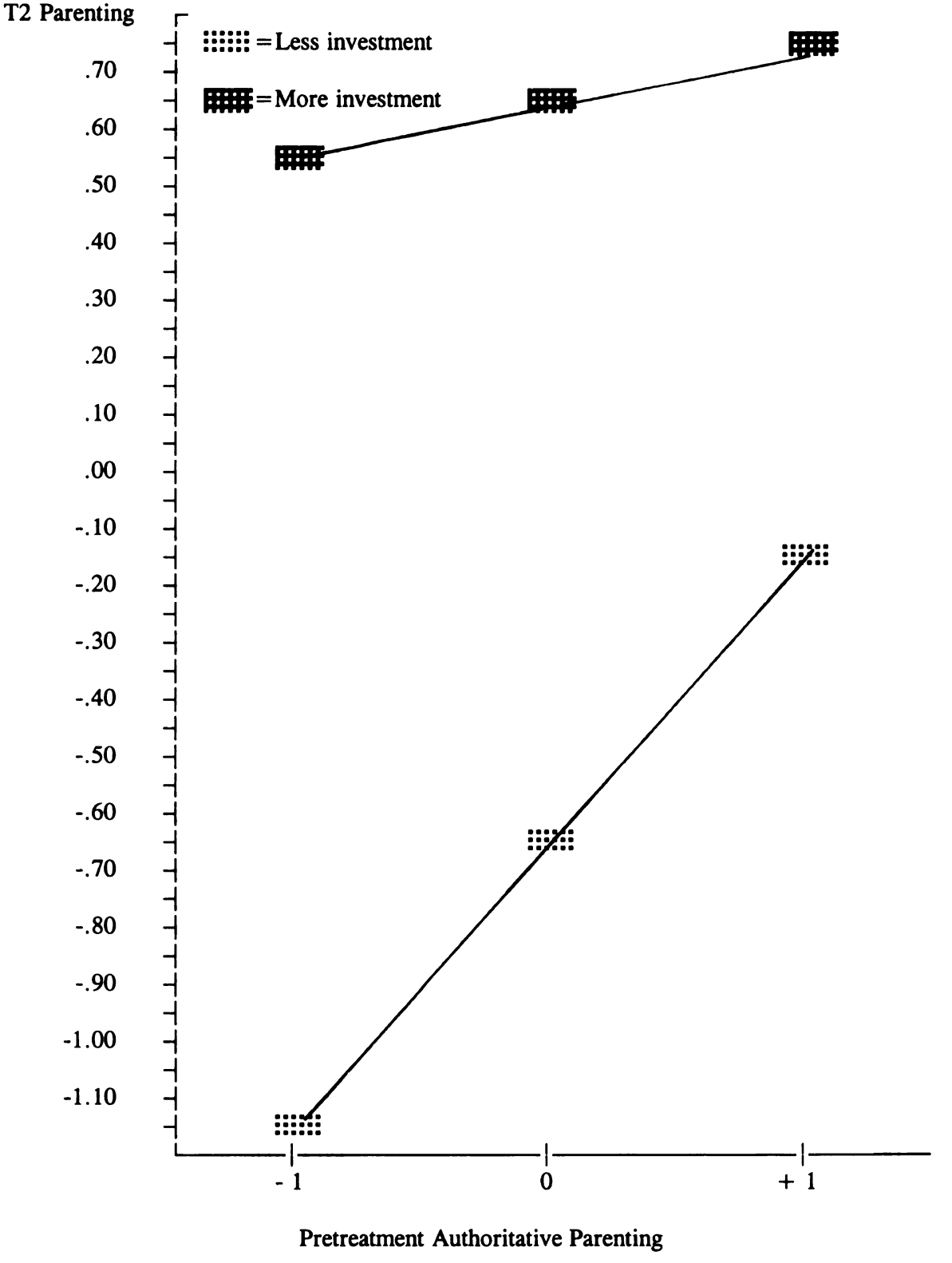


Figure 4. Relationship between Pretreatment and Termination (T2) Authoritative Parenting based on Cumulative Parent Treatment Investment.

end of the intervention were strongly associated with initial parenting, indicating relatively less change within this subset of treatment families. Level of authoritative parenting changed consistently and significantly from pretreatment to termination only among more highly invested families.

Discussion

Earlier regression analyses identified parent treatment investment as a significant predictor of improvement in positive and negative child behaviors, and authoritative parenting. The interaction effects described herein indicate additional relationships that are important to an understanding of observed variability in outcome among this treatment sample. Although all of the families in the sample completed the entire intervention protocol, differential treatment effectiveness was observed relative to parent treatment investment. In this regard, Cumulative Treatment Investment was identified as a moderator between pretreatment and termination levels of positive child behavior and authoritative parenting, and between negative child behavior at pretreatment and follow-up. Thus, parents' overall investment across the span of the intervention influenced the extent to which child and parenting behavior changed from initial pretreatment levels. For families in which cumulative investment was high, child and parenting outcomes were observed to be unrelated to pretreatment levels, suggesting a substantial treatment effect within this group. In contrast, pretreatment and termination levels of child behavior and parenting style were highly correlated within the less invested group, suggesting negligible improvement in targeted parent and child behaviors from baseline levels among families whose overall investment was lower. Thus, cumulative treatment investment was differentially associated with better or worse outcomes in child behavior and parenting among the families in this sample, with significant improvement found primarily among the more highly invested families.

Although these interactions must be interpreted with caution because of the more liberal

effect size criterion used to identify them, their potential significance should not be overlooked. The fact that cumulative, but not early, level of parent investment acted as a moderator of pretreatment functioning suggests that level of investment in the second half of treatment may have had particular significance for eventual outcome at termination. Again, the second half of treatment addressed issues that were typically more intense and difficult for the parents, and treatment investment was observed to decrease overall during this phase of the intervention. What these findings involving cumulative parent investment suggest is that parents who were relatively more able to maintain a higher level of investment during this phase of treatment (and therefore had higher cumulative investment scores) were more successful at effecting changes in positive and negative child behavior and in authoritative parenting independently of baseline levels of child and parent functioning. Although the precise reason for this finding cannot be determined, it may indicate that these parents were better able to process and resolve personal and interpersonal (marital) issues which might otherwise have interfered with treatment progress. These families, by virtue of their greater willingness to address difficult personal and marital issues, subsequently experienced more positive outcomes at termination. This hypothesis is consistent with research indicating that marital conflict impedes outcome in parent training programs unless successfully addressed as part of the intervention, and that child outcome is enhanced in parent training programs that attend to personal and marital difficulty (Dadds, et al., 1987a; Griest, Forehand, Rogers, Breiner, Furey, & Williams, 1982; Sayger, Horne, & Glaser, 1993). Again, however, this explanation must be considered to be quite tentative at this time.

LIST OF REFERENCES

LIST OF REFERENCES

Adler, R., & Raphael, B. (1983). Children of alcoholics. Australian and New Zealand Journal of Psychiatry, 17, 3-8.

Alexander, J.F., & Parsons, B.V. (1973). Short-term behavioral intervention with delinquent families: Impact on family process and recidivism. Journal of Abnormal Psychology, 18, 219-225.

Alterman, A.I., Bridges, R.K., & Tarter, R.E. (1986). Drinking behavior of high risk college men: Contradictory preliminary findings. Alcoholism, 10, 305-310.

Alterman, A.I., & Tarter, R.E. (1983). The transmission of psychological vulnerability: Implications for alcoholism etiology. Journal of Nervous and Mental Disease, 171, 147-154.

Alvy, K.T. (1991). Parent training as a prevention strategy. In D. Robbins (Ed.), Parent training is prevention: Preventing alcohol and other drug problemsamong youth in the family. Rockville, MD: U.S. DHHS.

Anderson, S. A., Atilano, R. B., Bergen, L. P., Russell, C. S., & Jurich, A. P. (1985). Dropping out of marriage and family therapy: Intervention strategies and spouses' perceptions. The American Journal of Family Therapy, 13, 39-54.

Baekeland, F., & Lundwall, L. (1975). Dropping out of treatment: A critical review. Psychological Bulletin, 82, 738-783.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior. Psychological Review, 84, 191-215.

Bandura, A. (1989). Human agency in social cognitive theory. American Psychologist, 4, 1175-1184.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51, 1173-1182.

Beck, A. T., & Beck, R. W. (1972). Screening depressed patients in family practice: A rapid technique. Postgraduate Medicine, 52, 81-85.

Belsky, J. (1981). Early human experience: A family perspective. Developmental Psychology, 17, 3-23.

Belsky, J. (1984). The determinants of parenting: A process model. Child Development, 55, 83-96.

Belsky, J., Robins, E., & Gamble, W. (1984). The determinants of parental competence. In M. Lewis (Ed.), Beyond the dyad. NY: Plenum Press.

Bennett, L. A., & Wolin, S. J. (1987). Couples at risk for transmission of alcoholism: Protective influences. Family Process, 111-129.

Billings, A. G., & Moos, R. H. (1983). Comparisons of children of depressed and nondepressed parents: A social-environmental perspective. Journal of Abnormal Psychology, 11, 463-486.

Bloch, S., Bond, G., Qualls, B., Yalom, I., & Zimmerman, E. (1976). Patients' expectations of therapeutic improvement and their outcomes. American Journal of Psychiatry, 133, 653-657.

Block, J. H., Block, J., & Gjerde, P. F. (1986). The personality of children prior to divorce: A prospective study. Child Development, 57, 827-840.

Block, J. H., Block, J., & Morrison, A. (1981). Parental agreement-disagreement on child-rearing orientations and gender related personality correlates in children. Child Development, 52, 965-974.

Bowden, C. L., Schoenfeld, L. S., & Adams, R. L. (1980). Mental health attitudes and treatment expectations as treatment variables. Journal of Clinical Psychology, 36, 653-657.

Brody, G. H., & Forehand, R. (1986). Maternal perceptions of child maladjustment as a function of the combined influence of child behavior and maternal depression. Journal of Consulting and Clinical Psychology, 54, 237-240.

Brody, G. H., Pillegrini, A. D., & Sigel, I. E. (1986). Marital quality and mother-child and father-child interactions with school-aged children. Developmental Psychology, 22, 291-296.

Brown, S. A., Creamer, V. A. & Stetson, B. A. (1983). Adolescent alcohol expectancies in relation to personality traits and adolescent drug use. Journal of Abnormal Psychology, 96, 117-121.

Burling, T. A., Reilly, P. M., Moltzen, J. O., & Ziff, D. A. (1989). Self-efficacy and relapse among inpatient drug and alcohol abusers: A predictor of outcome. Journal of Studies on Alcohol, 50, 354-360.

Burns, D. D., & Nolen-Hoeksema, S. (1991). Coping styles, homework compliance, and the effectiveness of cognitive-behavioral therapy. Journal of Consulting and Clinical Psychology, 59, 305-307.

Cernkovich, S. A., & Giordano, P. C. (1987). Family relationships and delinquency. Criminology, 25, 295-321.

Chamberlain, P., Patterson, G. R., Reid, J. B., Kavanaugh, K., & Forgatch, M. S. (1984). Observation of client resistance. Behavior Therapy, 15, 144-155.

Chamberlain, P., & Ray, J. (1988). The therapy process code: A multidimensional

system for observing therapist and client interactions in family treatment. In R.J. Prinz (Ed.), Advances in behavioral assessment of children and families (Vol. 4, pp. 189-217). Greenwich, CT: JAI Press.

Chassin, L., Pillow, D. R., Curran, P. J., Molina, B. S. G., & Barrera, M. (1993). Relation of parental alcoholism to early adolescent substance use: A test of three mediating mechanisms. Journal of Abnormal Psychology, 102, 3-19.

Chassin, L., Rogosch, F., & Barrera, M. (1991). Substance use and symptomatology among adolescent children of alcoholics. Journal of Abnormal Psychology, 100, 449-463.

Christensen, A., Phillips, S., Glasgow, R, E. & Johnson, S. M. (1983). Parental characteristics and interactional dysfunction in families with child behavior problems. Journal of Abnormal Child Psychology, 11, 153-166.

Christiansen, B. A., & Goldman, M. S. (1983). Alcohol-related expectancies in relation to personal and parental drinking patterns. Journal of Consulting and Clinical Psychology, 51, 249-257.

Clark, D. B., & Baker, B. L. (1983). Predicting outcome in parent training. Journal of Consulting and Clinical Psychology, 51, 309-311.

Clark, D. B., Baker, B. L., & Heifetz, L. J. (1982). Behavioral training for parents of mentally retarded children: Prediction of outcome. American Journal of Mental Deficiency, 87, 14-19.

Cloninger, R. (1987). Neurogenetic adaptive mechanisms in alcoholism. Science, 236, 410-416.

Cohen, J. (1992). A power primer. Psychological Bulletin, 112, 155-159.

Cohen, J. (1987). Statistical power analysis for the behavioral sciences. Hillsdale, NJ: Lawrence Erlbaum Associates.

Collins, J. F., & Hyer, L. (1986). Treatment expectancy among psychiatric inpatients. Journal of Clinical Psychology, 42, 562-569.

Collins, J. J. (1981). Alcohol careers and criminal careers. In J.J. Collins (Ed.), Drinking and crime. New York: Guilford Press.

Cotton, N. S. (1979). The familial incidence of alcoholism: A review. Journal of Studies on Alcohol, 40, 89-116.

Crits-Christoph, P., & Mintz, J. (1991). Implications of therapist effects for the design and analysis of comparative studies of psychotherapies. Journal of Consulting and Clinical Psychology, 59, 20-26.

Cummings, E. M., Iannotti, R. J., & Zahn-Walker, C. (1985). Parental characteristics

and interactional dysfunction in families with child behavior problems: A preliminary investigation. Journal of Abnormal Child Psychology,11, 153-166.

Cummings, E. M., Zahn-Walker, C., Radke-Yarrow, M. (1981). Young children's responses to expressions of anger and affection by others in the family. Child Development, 52, 1274-1282.

Cummings, E. M., Zahn-Walker, C., & Radke-Yarrow, M. (1984). Developmental changes in children's reactions to anger in the home. Journal of Child Psychology and Psychiatry, 25, 63-73.

Dadds, M. R. (1987). Families and the origins of child behavior. Family Process, 26, 341-357.

Dadds, M. R., Sanders, M. R., Behrens, B. C., & James, J. E. (1987). Marital discord and child behavior problems: A description of family interactions during treatment. Journal of Clinical Child Psychology, 16, 192-203.

Dadds, M. R., Schwartz, S. & Sanders, M. R. (1987). Marital discord and treatment outcome in behavioral treatment of child behavior problems. Journal of Consulting and Clinical Psychology, 55, 396-403.

Darling, M., & Steinberg, L. (1993). Parenting style as context: An integrative model. Psychological Bulletin, 113, 487-496.

Davies, W. H., Zucker, R. A., Noll, R. N., & Fitzgerald, H. (1989). Early socialization practices in alcoholic families: The relationship of child-rearing patterns to demographics and parental psychopathology. Unpublished manuscript, Michigan State University.

DeMarsh, J., & Kumpfer, K. L. (1986). Family-oriented interventions for the prevention of chemical dependency in children and adolescents. In S. Griswold-Ezekoye, K. L. Kumpfer, & W. J. Bukoski (Eds.), Childhood and chemical abuse: Prevention and intervention (pp. 117-151). New York: Haworth.

Dielman, T. E., Barton, K., & Cattell, R. B. (1977). Relationships among family attitudes and child-rearing practices. Journal of Genetic Psychology, 130, 105-112.

Dishion, T. J., Kavanaugh, K., & Reid, J. B. (1989, November). Child-rearing vs. peer interventions in the reduction of risk for adolescent substance use and adjustment problems: A secondary prevention strategy. Paper presented at the Conference for the Advancement of Applied Behavior Therapy, Washington, DC.

Dishion, T. J., & Patterson, G. R. (1992). Age effects in parent training outcome. Behavior Therapy, 23, 719-729.

Duckro, P. N. (1991). Biofeedback in the management of headache: II. Headache Quarterly, 2, 17-22.

Dumas, J. E. (1989). Treating antisocial behavior in children: Child and family approaches. Clinical Psychology Review, 9, 197-222.

Dumas, J. E. (1986). Parental perception and treatment outcome in families of aggressive children: A causal model. Behavior Therapy, 17, 420-432.

Dumas, J. E., & Albin, J. (1986). Parent training outcome: Does active parental involvement matter? Behavior Research and Therapy, 24, 227-230.

Dumas, J. E., & Serketich, W. J. (1994). Maternal depressive symptomatology and child maladjustment: A comparison of three process models. Behavior Therapy, 25, 161-181.

Dumas, J. E., & Wahler, R. G. (1983). Predictors of treatment outcome in parent training: Mother insularity and socioeconomic disadvantage. Behavioral Assessment, 5, 301-313.

Dumas, J. E., & Wahler, R. G. (1985). Indiscriminate mothering as a contextual factor in aggressive-oppositional child behavior: "Damned if you do and damned if you don't". Journal of Abnormal Child Psychology, 13, 1-17.

Dunn, N. J., Jacob, T., Hummon, N., and Seilhamer, R. A. (1987). Marital stability in alcoholic-spouse relationships as a function of drinking pattern and location. Journal of Abnormal Psychology, 96, 99-107.

Edwards, D. W., Yarvis, R. M., Mueller, D. P., & Langsley, D. G. (1978). Does patient satisfaction correlate with success? Hospital and Community Psychiatry, 29, 188-190.

Elliott, R., & James, E. (1989). Varieties of client experience in psychotherapy: An analysis of the literature. Clinical Psychology Review, 9, 443-467.

Ellwood, L. C. (1980). Effects of alcoholism as a family illness on child behavior and development. Military Medicine, 188-192.

Emery, R. E., Hetherington, M., & Dilalla, L. F. (1984). Divorce, children, and social policy. In H. W. Stevenson & A. E. Siegel (Eds.), Child development research and social policy. Chicago: University of Chicago Press.

Emery, R. E., & O'Leary, K. D. (1982). Children's perceptions of marital discord and behavior problems in boys and girls. Journal of Abnormal Child Psychology, 10, 11-24.

Eron, L. D., Huesmann, L. R., Dubow, E., Romanoff, R. & Yarmel, P. W. (1987). Aggression and its correlates over 22 years. In D. H. Crowell, I. M. Evans & C. R. O'Donnell (Eds.) Childhood aggression and violence: Sources of influence, prevention, and control (pp. 249-262). New York: Plenum Press.

Evans, R. L., Smith, Halar, E. M., & Kiolet, C.L. (1986). Effect of expectation and level of adjustment on treatment outcome. Psychological Reports, 57, 936-938.

Evans, R. L., Kiolet, C. L., & Smith (1985). Treatment outcome as a function of

expectations and prior adjustment. Journal of Social Behavior and Personality, 1, 133-136.

Famularo, R., Stone, K., Barnum, R., & Wharton, R. (1986). Alcoholism and severe child maltreatment. American Journal of Orthopsychiatry, 56, 481-485.

Farrington, D. P. & West, D. J. (1981). The Cambridge study in delinquent development. In S. A. Mednick & A. E. Baert (Eds.), Prospective longitudinal research: An empirical basis for the prevention of psychosocial disorders (pp. 296-297). New York: Oxford University Press.

Fiester, A. R., & Rudestam, K. E. (1975). Multivariate analysis of the early dropout process. Journal of Consulting and Clinical Psychology, 43, 528-535.

Filstead, W. J., McElfresh, O., & Anderson, C. (1981). Comparing the family environments of alcoholic and 'normal' families. Journal of Alcohol and Drug Education, 26, 24-31.

Fitzgerald, H. E., Sullivan, L. A., Ham, H. P., Zucker, R. A., Bruckel, S., Schneider, A. M., & Noll, R. B. (1993). Predictors of behavior problems in three-year-old sons of alcoholics: Early evidence for the onset of risk. Child Development, 64, 110-123.

Fitzgerald, H. E., Sullivan, L. A., Bruckel, S., Schneider, A., Zucker, R. A., & Noll, R. B. (1989). Parental aggression related to behavior problems in three-year-old sons of alcoholics. Presented at the 4th World Congress, World Association of Infant Psychiatry and Allied Disciplines, Lugano, Switzerland.

Fitzgerald, H. E., Zucker, R. A., & Yang, H. (1995). Developmental systems theory and alcoholism: Analyzing patterns of variation in high risk families. Psychology of Addictive Behaviors, 9, 1-15.

Fleischman, M. J. (1981). A replication of Patterson's "Intervention for Boys with Conduct Problems". Journal of Consulting and Clinical Psychology, 49, 342-351.

Fleming, J. P., Kellam, S. G., & Brown, C. H. (1982). Early predictors of age at first use of alcohol, marijuana, and cigarettes. Drug and Alcohol Dependence, 9, 285-303.

Forehand, R., & Atkeson, B. M. (1977). Generality of treatment effects with parents as therapists: A review of assessment and implementations procedures. Behavior Therapy, 8, 575-593.

Forehand, R., Furey, W., & McMahon, R. (1984). The role of maternal distress in a parent training program to modify child noncompliance. Behavioral Psychotherapy, 12, 93-108.

Forehand, R., Middlebrook, J., Rogers, T., & Stiffle, M. (1983). Dropping out of parent training. Behavior Research and Therapy, 21, 663-668.

Frank, S., Hole, C. B., Jacobson, S., Justkowski, R., & Huyck, M. (1986). Psychological predictors of parents' sense of competence and control and self- versus child-focused gratifications. Developmental Psychology, 22, 348-355.

Frieswyk, S. H., Allen, J. G., Colson, D. B., Coyne, L., Gabbard, G. O., Horwitz, L., & Newsom, G. (1986). Therapeutic alliance: Its place as a process and outcome variable in dynamic psychotherapy research. Journal of Consulting and Clinical Psychology, 54, 32-38.

Frankel, R., & Simmons, J. Q. (1992). Parent behavioral training: Why and when some parents drop out. Journal of Clinical Child Psychology, 21, 322-330.

Frick, P. J., Lahey, B. B., Loeber, R., Stouthamer-Loeber, M., Christ, M. A. G., & Hanson, K. (1992). Familial risk factors to oppositional defiant disorder and conduct disorder: Parental psychopathology and maternal parenting. Journal of Consulting and Clinical Psychology, 60, 49-55.

Furey, W. M., & Basili, L. A. (1988). Predicting consumer satisfaction in parent training for noncompliant children. Behavior Therapy, 19, 555-564.

Gard, G. C., & Berry, K. K. (1986). Oppositional children: Taming tyrants. Journal of Clinical Child Psychology, 15, 148-158.

Gardner, F. E. (1987). Positive interaction between mothers and conduct-problem children: Is there training for harmony as well as fighting? Journal of Abnormal Child Psychology, 15, 283-292.

Gersten, J. C., Langner, T. S., Eisenberg. J. C., Simcha-Fagan, O. & NcCarthy, E. D. (1976). Stability and change in types of behavioral disturbance of children and adolescents. Journal of Abnormal Child Psychology, 4, 111-127.

Ghodsian, M., Fogelman, K., Lambert, L., & Tibbenham, A. (1980). Changes in behaviour ratings of a national sample of children. British Journal of Social and Clinical Psychology, 19, 247-256.

Gomes-Schwartz, B. (1978). Effective ingredients in psychotherapy: Prediction of outcome from process variables. Journal of Consulting and Clinical Psychology, 46, 1023-1035.

Goodwin, D. W. (1985). Alcoholism and genetics: The sins of the fathers. Archives of General Psychiatry, 42, 171-174.

Gottman, J. M., & Katz, L. F. (1989). Effects of marital discord on young children's peer interaction and health. Developmental Psychology, 375-381.

Griest, D., & Forehand, R. (1982). How can I get any parent training done with all these other problems going on? The role of family variables in child behavior therapy. Child and Family Behavior Therapy, 4, 73-79.

Griest, D., Forehand, R., Rogers, T., Breiner, J., Furey, W., & Williams, C. A. (1982). Effects of parent enhancement therapy on treatment outcome and generalization of a parent training program. Behavior Research and Therapy, 20, 429-436.

Griest, D. L., Forehand, R., & Wells, K. C. (1981). Follow-up assessment of parent

behavioral training: An analysis of who will participate. Child Study Journal, 11, 221-229.

Halikas, J. A., & Rimmer, J. D. (1974). Predictors of multiple drug abuse. Archives of General Psychiatry, 31, 414-418.

Hamilton, M. (1960). A rating scale for depression. Journal of Neurosurgery and Psychiatry, 23, 56-62.

Hansson, L., & Berglund, M. (1987). Individual measures of outcome vs. standardized rating scales in evaluation of in-hospital psychiatric treatment: A methodological study. Acta Psychiatrica Scandinavica, 75, 275-282.

Harwood, M. & Leonard, K. (1989). Family history of alcoholism, youthful antisocial behavior and problem drinking among DWI offenders. Journal of Studies on Alcohol, 50, 210-216.

Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. Psychological Bulletin, 112, 64-105.

Heather, N. (1982). Alcohol dependence and problem drinking in Scottish young offenders. British Journal on Alcohol and Alcoholism, 17, 145-153.

Heineman, S., & Yudin, L. (1974). The consumer and evaluator: Perceptions and satisfactions level of former clients. Journal of Community Psychology, 2, 21-23.

Helzer, J. E., & Pryzbeck, T. R. (1988). The co-occurrence of alcoholism and other psychiatric disorders in the general populations and its impact on treatment. Journal of Studies on Alcohol, 49, 219-224.

Hesselbrock, V. M., Hesselbrock, M. N., & Stabenau, J. R. (1985). Alcoholism in men patients subtyped by family history and antisocial personality. Journal of Studies on Alcohol, 46, 59-64.

Hetherington, E. M., Cox, M., & Cox, R. (1981). Effects of divorce on parents and children. In M. Lamb (Ed.), Nontraditional families. Hillsdale, NJ: Erlbaum.

Hobbes, S. A., Walle, D. L., & Hammersly, G. A. (1991). The relationship between child behavior and acceptability of contingency management procedures. Child and Family Behavior Therapy, 12, 95-102.

Holden, G. W., Lavigne, V. V., & Cameron, A. M. (1990). Probing the continuum of effectiveness in parent training: Characteristics of parents and preschoolers. Journal of Consulting and Clinical Psychology, 19, 2-8.

Hops, H., Biglan, A., Sherman, L., Arthur, J., Friedman, L., & Osteen, V. (1987). Home observations of family interactions of depressed women. Journal of Consulting and Clinical Psychology, 55, 341-346.

Horton, L. (1984). The father's role in behavioral parent training: A review. Journal of Clinical Child Psychology, 13, 274-279.

Horne, A. M. (1981). Aggressive behavior in normal and deviant members of intact vs. mother-only families. Journal of Abnormal Child Psychology, 9, 283-290.

Howard, K., Orlinsky, D., & Perilstein, J. (1976). Contribution of therapists to patients' experiences in psychotherapy: A components of variance model for analyzing process data. Journal of Consulting and Clinical Psychology, 44, 520-526.

Jacob, T. (1987). Alcoholism and family interaction: Classifications resulting from subgroup analyses and multimethod assessments. In K. Hahlweg & M. J. Goldstein (Eds.), Understanding major mental disorder: The contribution of family interaction research. New York: Family Process Press.

Jacob, T., Favorini, A., Meisel, S. S., & Anderson, C. M. (1978). The alcoholic's spouse, children and family interactions: Substantive findings and methodological issues. Journal of Studies on Alcohol, 39, 1231-1251.

Jacob, T., & Leonard, K. (1986). Psychosocial functioning in children of alcoholic fathers, depressed fathers and control fathers. Journal of Studies on Alcohol, 47, 373-380.

Jacob, T., Ritchey, D., Cvitkovic, J.F., & Blane, H. T. (1981). Communication styles of alcoholic and nonalcoholic families when drinking and not drinking. Journal of Studies on Alcohol, 42, 466-482.

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. Journal of Consulting and Clinical Psychology, 59, 12-19.

Jaffe, P., Wolfe, D., Wilson, S., & Zak, L. (1986). Similarities in behavioral and social maladjustment among child victims and witnesses to family violence. American Journal of Orthopsychiatry, 56, 142-146.

Jansen, R. E., Fitzgerald, H. E., Ham, H. P., & Zucker, R. A. (in press). Pathways into risk: Temperament and behavior problems in three- to five-year-old sons of alcoholics. Alcoholism: Clinical and Experimental Research.

Johnson, P. L. & O'Leary, D. (1987). Parental behavior patterns and conduct disorders in girls. Journal of Abnormal Child Psychology, 15, 573-581.

Johnson, S. M., & Christensen, A. (1975). Multiple criteria follow-up of behavior modification with families. Journal of Abnormal Child Psychology, 3, 135-154.

Johnson, S. M., & Lobitz, G. K. (1974). The personal and marital adjustment of parents as related to observed child deviance and parenting behaviors. Journal of Abnormal Child Psychology, 2, 193-207.

Johnston, L. D., O'Malley, P. M., & Evelard, L. (1978). Drugs and delinquency: A search for causal connections. In D. B. Kandel (Ed.), Longitudinal Research on Drug Use. Washington, DC: Hemisphere Publishing Company.

Jouriles, E. N., Barling, J. & O'Leary, D. K. (1987). Predicting child behavior problems in maritally violent families. Journal of Abnormal Child Psychology, 15, 165-173.

Jouriles, E. N., & Farris, A. M. (1992). Effects of marital conflict on subsequent parent-son interactions. Behavior Therapy, 23, 355-374.Kandel, D.B. (1982). Epidemiological and psychosocial perspectives on adolescent drug use. Journal of Child Psychiatry, 21, 328-347.

Jouriles, E. N., Murphy, C. M., & O'Leary, K. D. (1989). Effects of maternal mood on mother-son interaction patterns. Journal of Abnormal Child Psychology, 17, 513-525.

Jouriles, E. N., Pfiffner, L. J., & O'Leary, S. G. (1988). Marital conflict, parenting, and toddler conduct problems. Journal of Abnormal Child Psychology, 16, 197-206.

Kandel, D. B., Kessler, R., & Margulies, R. (1978). Antecedents of adolescents' initiation into stages of drug use: A developmental analysis. In D. B. Kandel (Ed.), Longitudinal research in drug use: Empirical findings and methodological issues. Washington, DC: Hemisphere-Wiley.

Kazdin, A. E. (1981). Acceptability of child treatment techniques: The influence of treatment efficacy and adverse side effects. Behavior Therapy, 12, 493-506.

Kazdin, A. E. (1985). Treatment of antisocial behavior in children. Homewood, IL: Dorsey Press.

Kazdin, A. E. (1987). Treatment of antisocial behavior in children: Current status and future directions. Psychological Bulletin, 102, 187-203.

Kemper, T. D., & Reichler, M. L. (1976). Marital satisfaction and conjugal power as determinants of intensity and frequency of rewards and punishments administered by parents. The Journal of Genetic Psychology, 129, 221-234.

Kirtner, W. L., & Cartwright, D. S. (1958). Success and failure in client-centered therapy as a function of initial in-therapy behavior. Journal of Consulting Psychology, 22, 329-333.

Klein, N. C., Alexander, J. F., & Parsons, B. V. (1977). Impact of family systems intervention on recidivism and sibling delinquency: A model of primary prevention and program evaluation. Journal of Consulting and Clinical Psychology, 45, 469-474.

Klein, F., Adrian, A., & Spevak, M. (1974). Patients evaluate therapists. Archives of General Psychiatry, 31, 113-116.

Knop, J., Teasdale, T. W., Schulsinger, F., & Goodwin, D. W. (1985). A prospective study of young men at high risk for alcoholism: School behavior and achievement. Journal of

Studies on Alcohol, 46, 273-278.

Kratcoski, P. (1982). Child abuse and violence against the family. Child Welfare, 61, 435-444.

Krosnick, J. A., & Judd, C. M. (1982). Transitions in social influence at adolescence: Who induces cigarette smoking? Developmental Psychology, 18, 359-368.

Kuczynski, L. (1984). Socialization goals and mother-child interaction: Strategies for long-term and short-term compliance. Developmental Psychology, 20, 1061-1073.

Lahey, B. B., Piacentini, J. C., McBurnett, K., Stone, P., Hartdagen, S. E., & Hynd, G. (1988). Psychopathology and antisocial behavior in the parents of children with conduct disorder and hyperactivity. Journal of the American Academy of Child and Adolescent Psychiatry, 27, 163-170.

Lambert, M. (1989). The individual therapist's contribution to psychotherapy process and outcome. Clinical Psychology Review, 9, 469-485.

Lebow, J. (1982). Consumer satisfaction with mental health treatment. Psychological Bulletin, 91, 244-259.

Leonard, K. E., Bromet, E. J., Parkinson, D. K., Day, N. L., & Ryan, C. M. (1985). Patterns of alcohol use and physically aggressive behavior in men. Journal of Studies on Alcohol, 46, 279-282.

Lewis, D. O., Moy, E., Jackson, L. D., Aaronson, R., Restifo, N., Serra, S., & Simos, A. (1985). Biopsychosocial characteristics of children who later murder: A prospective study. American Journal of Psychiatry, 142, 1161-1167.

Loeber, R. (1982). The stability of antisocial and delinquent child behavior: A review. Child Development, 53, 1431-1446.

Loeber, R. (1986). Natural histories of conduct problems, delinquency, and associated substance use: Evidence for developmental progressions. In B. B. Lahey & A. E. Kazdin (Eds.), Advances in clinical child psychology (Vol. 10). New York: Plenum Press.

Loeber, R. & Dishion, T. (1983). Early predictors of male delinquency: A review. Psychological Bulletin, 94, 68-99.

Loeber, R., & Stouthamer-Loeber, M. (1986). Family factors as correlates and predictors of juvenile conduct problems and delinquency. In M. Tonry & N. Morris, (Eds.), Crime and justice, vol. 7. Chicago: University of Chicago Press.

Lord, D. B. (1983). Parental alcoholism and the mental health of children: A bibliography and brief observations. Journal of Alcohol and Drug Education, 29, 1-11.

Luborsky, L., McLellan, A. T., Woody, G. E., O'Brien, C. P., & Auerbach, A. (1985).

Therapist success and its determinants. Archives of General Psychiatry, 42, 602-611.

MacMurray, J. P., Nessman, D. G., Haviland, M. G., & Anderson, D. L. (1987). Depressive symptoms and persistence in treatment for alcohol dependence. Journal of Studies on Alcohol, 48, 277-280.

Maguin, E. T. (1991). Evaluation of a community program for the prevention of conduct problems among preschool age sons of alcoholic fathers. Doctoral dissertation, Michigan State University, Department of Psychology, East Lansing, MI.

Maguin, E. T., Zucker, R. A., & Fitzgerald, H. E. (1994). The path to alcohol problems through conduct problems: A family-based approach to very early intervention with risk. Journal of Research on Adolescence, 4, 249-269.

Martin, P. J., & Sterne, A. L. (1975). Prognostic expectations and treatment outcome. Journal of Consulting and Clinical Psychology, 43, 572-576.

McAuley, R. (1982). Training parents to modify conduct problems in their children. Journal of Child Psychology and Psychiatry and Allied Disciplines, 23, 335-342.

McCord, J. (1979). Some child-rearing antecedents of criminal behavior in adult men. Journal of Personality and Social Psychology, 37, 1477-1486.

McCord, J. (1980). Patterns of deviance. In S. B. Sells, R. Crandall, M. Roff, J. Strauss & W. Pollin (Eds.), Human functioning in longitudinal perspective: Studies of normal and psychopathic populations. Baltimore: Williams & Wilkins Company.

McKay, G.D. (1991). Parents as role models. In D. Robbins (Ed.), Parent training is prevention: Preventing alcohol and other drug problems among youth in the family. Rockville, MD: U.S. DHHS.

McMahon, R. J., Forehand, R. L., & Griest, D. L. (1981a). Effects of knowledge of social learning principles on enhancing treatment outcome and generalization in a parent training program. Journal of Consulting and Clinical Psychology, 49, 526-532.

McMahon, R. J., Forehand, R. L., Griest, D. L., & Wells, K. C. (1981b). Who drops out of treatment during parent behavioral training? Behavioral Counseling Quarterly, 1, 79-85.

McNeill, B. W., May, R. J., & Lee, V. E. (1987). Perceptions of counselor source characteristics by premature and successful terminators. Journal of Counseling Psychology, 34, 86-89.

Merikangas, K. R., Weissman, M. M., Prusoff, B. A., Pauls, D. L., & Leckman, J. F. (1985). Depressives with secondary alcoholism: Psychiatric disorders in offspring. Journal of Studies on Alcohol, 46, 199-204.

Miller, P. M., Smith, G. T., & Goldman, M. S. (1990). Emergence of alcohol expectancies in childhood: A possible critical period. Journal of Studies on Alcohol, 51, 343-

349.

Mills, C. J., & Noyes, H. L. (1984). Patterns and correlates of initial and subsequent drug use among adolescents. Journal of Consulting and Clinical Psychology, 52, 231-243.

Moos, R. H., & Billings, A. G. (1982). Children of alcoholics during the recovery process: Alcoholic and matched control families. Addictive Behaviors, 7, 155-163.

Moos, R. H., Finney, J. W., & Chan, D. A. (1981). The process of recovery from alcoholism: I. Comparing alcoholic patients and matched community controls. Journal of Studies on Alcohol, 42, 383-402.

Moos, R.H., Finney, J.W., & Gamble, W. (1982). The process of recovery from alcoholism: II. Comparing spouses of alcoholic patients and matched community controls. Journal of Studies on Alcohol, 43, 888-907.

Moos, R. H., & Moos, B. S. (1981). Family Environment Scale Manual. Palo Alto, CA: Consulting Psychologists Press.

Moos, R. H. & Moos, B. S. (1984). The process of recovery from alcoholism: III. Comparing functioning in families of alcoholics and matched control families. Journal of Studies on Alcohol, 45, 111-118.

Nelson, M. L., & Taylor, C. S. (1992, Aug). Openness to experience and working alliance: A preliminary report. Paper presented at the 101st Annual Convention of the American Psychological Association, Toronto, Canada.

Nelson, R. A., & Borkovec, T. D. (1989). Relationship of client participation and psychotherapy. Journal of Behavior Therapy and Experimental Psychiatry, 20, 155-162.

Noll, R. B., & Zucker, R. A. (1985). The Child Behavior Rating Scale -- Preschool Version. Unpublished instrument, Michigan State University, East Lansing, MI.

Noll, R. B., Zucker, R. A., & Greenberg, G. S. (1990). Identification of alcohol by smell among preschoolers: Evidence for early socialization about drugs occurring in the home. Child Development, 61, 1520-1527.

Noll, R. B., Zucker, R. A., Weil, C., & Greenberg, G. S. (1984, Aug). Cognitive factors in substance abuse: The case for early learning. Paper presented at the Annual Meeting of the American Psychological Association, Toronto, Canada.

Nye, C. L. (1992). Parent, family, and treatment process predictors of child outcome among alcoholic families in an early intervention program. Masters thesis, Michigan State University, East Lansing, MI.

Nye, C. L., Zucker, R. A., & Fitzgerald, H. E. (in press). Early intervention in the path to alcohol problems through conduct problems: Treatment involvement and child behavior change. Journal of Consulting and Clinical Psychology.

Oltmanns, T. F., Broderick, J. E., O'Leary, K. D. (1977). Marital adjustment and the efficiency of behavior therapy with children. Journal of Consulting and Clinical Psychology, 45, 724-729.

Olweus, D. (1980). Familial and temperamental determinants of aggressive behavior in adolescent boys: A causal analysis. Developmental Psychology, 16, 644-660.

Orlinsky, D. E. (1989). Researchers' images of psychotherapy: Their origins and influence on research. Clinical Psychology Review, 9, 413-441.

Orlinsky, D. E., & Howard, K. I. (1980). Gender and psychotherapeutic outcome. In A. M. Brodsky & R. T. Hare-Mustin (Eds.), Handbook of psychotherapy and behavior change (Chapter 8). New York: John Wiley & Sons.

Patterson, G. R. (1976). The aggressive child: Victim and architect of a coercive system. In L. A. Hammerlynck, L. C. Handy, & E. J. Mash (Eds.), Behavior modification and families: Theory and research (Vol. 1, pp. 267-316). New York: Brunner/Mazel.

Patterson, G. R. (1986). Performance models for antisocial boys. American Psychologist, 41, 432-444.

Patterson, G. R., & Bank, L. (1987). Some amplifying mechanisms for pathologic processes in families. In M. Gunnar (Ed.) Minnesota Symposium on Child Psychology. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Patterson, G. R., & Chamberlain, P. (1994). A functional analysis of resistance during parent training therapy. Clinical Psychology: Science and practice, 1, 53-70.

Patterson, G. R., & Chamberlain, P. (1988). Treatment process: A problem at three levels. In L. C. Wynne (Ed.), The state of the art in family therapy research: Controversies and recommendations (pp. 189-223). New York: Family Process Press.

Patterson, G. R., Chamberlain, P., & Reid, J. B. (1982). A comparative evaluation of a parent-training program. Behavior Therapy, 13, 638-650.

Patterson, G. R., Cobb, J. A., & Ray, R. S. (1973). A social engineering technology for retraining the families of aggressive boys. In H. E. Adams & I. P. Unikel (Eds.), Issues and trends in behavior therapy (pp.). Springfield, IL: Charles C. Thomas.

Patterson, G. R., Dishion, T. J., & Chamberlain, P. (1993). Outcomes and methodological issues relating to treatment of antisocial children. In T. R. Giles (Ed.), Handbook of Effective Psychotherapy (pp. 43-88). New York: Plenum Press.

Patterson, G. R., & Reid, J. B. (1973). Intervention for families of aggressive boys: A replication study. Behavior Research and Therapy, 11, 383-394.

Patterson, G. R., & Stoolmiller, M. (in press). Relationship of changes in parental resistance and discipline practices to future clinical outcomes. Behavior Therapy.

Patterson, G. R., & Stouthamer-Loeber, M. (1984). The correlation of family management practices and delinquency. Child Development, 55, 1299-1307.

Peed, S., Roberts, M., & Forehand, R. (1977). Evaluation of the effectiveness of a standardized parent training program in altering the interaction of mothers and their noncompliant children. Behavior Modification, 1, 323-350.

Pekarik, G. (1992). Relationship of clients' reasons for dropping out of treatment to outcome and satisfaction. Journal of Clinical Psychology, 48, 91-98.

Popkin, M. H. (1991). Parents as family policymakers and rule setters. In D. Robbins (Ed.), Parent training is prevention: Preventing alcohol and other drug problems among youth in the family. Rockville, MD: U.S. DHHS.

Porter, B. & O'Leary, K. D. (1980). Marital discord and childhood behavior problems. Journal of Abnormal Child Psychology, 8, 287-295.

Primakoff, L., Epstein, N., & Covi, L. (1986). Homework compliance: An uncontrolled variable in cognitive therapy outcome research. Behavior Therapy, 17, 433-446.

Rachel, J. V., Guess, L. L., Hubbard, R. L., Maisto, S. A., Cavanaugh, E. R., Waddell, R., & Benrud, C. H. (1982). Adolescent drinking behavior, Vol. 1: The extent and nature of adolescent alcohol and drug use: The 1974 and 1978 National Sample Studies. Research Triangle Park: Research Triangle Institute.

Regier, D. A., Farmer, M. E., Rae, D. S., Locke, B. Z., Keith, S. J., Judd, L. L., & Goodwin, F. K. (1990). Comorbidity of mental disorders with alcohol and other drug abuse. Journal of the American Medical Association, 19, 2511-2518.

Reid, J. B., & Patterson, G. R. (1988). The development of antisocial behavior patterns in childhood and adolescence. European Journal of Personality,

Reider, E., Zucker, R. A., Maguin, E. T., Noll, R. B., & Fitzgerald, H. E. (1989, Aug). Alcohol involvement and violence towards children among high risk families. Paper presented at the 97th Annual Meeting of the American Psychological Association, New Orleans.

Reider, E., Zucker, R. A., Noll, R. B., Maguin, E. T., & Fitzgerald, H. E. (1988, Aug). Alcohol involvement and family violence in a high risk sample: I. Spousal violence. Presented at the 96th Annual Meeting of the American Psychological Association, Atlanta, GA.

Rice, L. N., & Wagstaff, A. K. (1967). Client voice quality and expressive style as indices of productive psychotherapy. Journal of Consulting Psychology, 31, 557-563.

Richman, N., Stevenson, J. & Graham, P. (1982). Pre-school to school. London: Academic Press.

Robins, L. N. (1978). Sturdy predictors of adult antisocial behavior: Replications from longitudinal studies. Psychological Medicine, 8, 611-622.

Robins, L. N. (1966). Deviant children grown up. Baltimore: The Williams & Wilkins Company.

Robins, L. N., West, P. A. & Herjanic, B. L. (1975). Arrests and delinquency in two generations: A study of black urban families and their children. Journal of Child Psychology and Psychiatry, 16, 125-140.

Robins, L. N., Helzer, J. H., Croughan, J., & Ratcliff, K. S. (1980). The NIMH diagnostic interview schedule: Its history, characteristics, and validity. St. Louis, MO: Washington University School of Medicine.

Roosa, M. W., Sandler, I. N., Beals, J., & Short, J. L. (1988). Risk status of adolescent children of problem-drinking parents. American Journal of Community Psychology, 16, 225-239.

Rydelius, P. (1981). Children of alcoholic fathers: A longitudinal prospective study. In S. S. Mednick & A. E. Baert (Eds.), Prospective longitudinal research: An empirical basis for the prevention of psychosocial disorders. New York: Oxford University Press.

Saltzman, C., Luetgert, M. J., Roth, C. H., Creaser, J., & Howard, L. (1976). Formation of a therapeutic relationship: Experiences during the initial phase of psychotherapy as predictors of treatment duration and outcome. Journal of Consulting and Clinical Psychology, 44, 546-555.

Sayger, T. V., Horne, A. M., & Glaser, B. A. (1993). Marital satisfaction and social learning family therapy for child conduct problems: Generalization of treatment effects. Journal of Marital and Family Therapy, 19, 393-402.

Schneider, A. M., Sullivan, L. A., Bruckel, S., Fitzgerald, H. E., Zucker, R. A., & Noll, R. B. (1989, Sept). The relation of parental depression and self-esteem to behavior problems in three-year-old sons of alcoholics. Paper presented at the 4th World Congress, World Association of Infant Psychiatry and Applied Disciplines, Lugano, Switzerland.

Schuckit, M. A., & Sweeney, S. (1987). Substance use and mental health problems among sons of alcoholics and controls. Journal of Studies on Alcohol, 48, 528-534.

Schwartz, D. (1991). Early termination from individual psychotherapy: A follow-up study of the earliest-leaving patients (and prospective patients). Dissertation Abstracts International, 52, 2784.

Scovern, A. W., Bukstel, L. H., Kilman, P. R., Lawal, R. A., Busemeyer, J., & Smith, V. (1980). Effects of parent counseling on the family system. Journal of Counseling Psychology, 27, 268-275.

Seilhamer, R. A., & Jacob, T. (1990). Family factors and adjustment of children of alcoholics. In M. Windle & J. Searles (Eds.), Children of alcoholics: A critical review of the literature (pp 168-186). New York: Guilford Press.

Seixas, J. (1977). Children from alcoholic families. In N. J. Estes & M. E. Heinemann (Eds.), Alcoholism: Development, consequences and interventions. St. Louis: The C.V. Mosby Company.

Selzer, M. L. (1975). A self-administered Short Michigan Alcoholism Screening Test (SMAST). Journal of Studies on Alcohol, 36, 117-126.

Shelton, J. L., & Levy, R. L. (1981). Enhancing compliance with behavioral assignments. In J. L. Shelton & R. L. Levy (Eds.), Behavioral assignments and treatment compliance. Illinois: Research Press.

Sher, K. J., Walitzer, K. S., Wood, P., & Brent, E. E. (1991). Characteristics of children of alcoholics: Putative risk factors, substance use and abuse, and psychopathology. Journal of Abnormal Psychology, 100, 427-448.

Smith, G. M., & Fogg, C. P. (1978). Psychological predictors of early use, late use, and non-use of marijuana among teenage students. In D. B. Kandel (Ed.), Longitudinal research on drug use: Empirical findings and methodological issues (pp 101-113). Washington, DC: Hemisphere-Wiley.

Speer, D. C. (1992). Clinically significant change: Jacobson and Truax (1991) revisited. Journal of Consulting and Clinical Psychology, 60, 402-408.

Stein, D. M., & Lambert, M. (1984). On the relationship between therapist experience and psychotherapy outcome. Clinical Psychology Review, 4, 1-16.

Steinglass, P. (1980a). A life history model of the alcoholic family. Family Process, 19, 211-225.

Steinglass, P. (1980b). Assessing families in their own homes. American Journal of Psychiatry, 137, 1523-1529.

Steinglass, P. (1981). The alcoholic family at home: Patterns of interaction in dry, wet, and transitional stages of alcoholism. Archives of General Psychiatry, 38, 578-584.

Steinglass, P. (1987). The alcoholic family. New York: Basic Books, Inc.

Steinglass, P., Tislenko, L., & Reiss, D. (1985). Stability/instability in the alcoholic marriage: The interrelationships between course of alcoholism, family process, and marital outcome. Family Process, 24, 365-383.

Stewart, M. A., DeBlois, C. S. & Cummings, C. (1980). Psychiatric disorder in the parents of hyperactive boys and those with conduct disorder. Journal of Child Psychology and Psychiatry, 21, 283-292.

Stewart, M. A. & Leone, L. (1978). A family study of unsocialized aggressive boys. Biological Psychiatry, 13, 107-117.

Stoneman, Z., Brody, G. H., & Burke, M. (1989). Marital quality, depression, and inconsistent parenting: Relationship with observed mother-child conflict. American Journal of Orthopsychiatry, 59, 105-117.

Stoolmiller, M., Duncan, T., Bank, L., & Patterson, G. R. (1993). Some problems and solutions in the study of change: Significant patterns of client resistance. Journal of Consulting and Clinical Psychology, 61, 920-928.

Tolan, P. H., & Lorian, R. P. (1988). Multivariate approaches to the identification of delinquency proneness in adolescent males. American Journal of Community Psychology, 16, 547-561.

Tracey, T. J. (1989). Client and therapist satisfaction over the course of psychotherapy. Psychotherapy, 26,177-182.

Tremblay, R. E., McCord, J., Boileau, H., LeBlanc, M., Gagnon, C., Charlebois, P., & Larivee, S. (1990, Nov). The Montreal prevention experiment: School adjustment and self-reported delinquency after three years of follow-up. Paper presented at the 42nd Annual Meeting of the American Society of Criminology, Baltimore, MD.

U.S. Department of Health & Human Services (1993). Eighth special report to Congress on alcohol and health. Washington, DC.

VanVoorhis, P., Cullen, F. T., Mathers, R. A., & Garner, C. C. (1988). The impact of family structure and quality of delinquency: A comparative assessment of structural and functional factors. Criminology, 26, 235-261.

Waas, G. A., & Anderson, G. P. (1991). Outcome expectancy and treatment acceptability: Perceptions of school-based interventions. Professional Psychology: Research and Practice, 22, 149-154.

Wadsworth, M. E. J. (1980). Early life events and later behavioral outcomes in a British longitudinal study. In S. B. Sell, R. Crandall, M. Roff, J. Strauss & W. Pollin (Eds.), Human functioning in longitudinal perspective: Studies of normal and psychopathic populations. Baltimore: Williams & Wilkins Company.

Wahler, R. G. & Dumas, J. E. (1987). Family factors in childhood psychology: Toward a coercion-neglect model. In T. Jacob (Ed.), Family interaction and psychopathology: Theories, methods, and findings. New York: Plenum Press.

Walker, E., Downey, G., & Bergman, A. (1989). The effects of parental psychopathology and maltreatment on child behavior: A test of the diathesis-stress model. Child Development, 60, 15-24.

Weber, M. D., Graham, J. W., Hansen, W. B., Flay, B. R., & Johnson, C. A. (1989). Evidence for two paths of alcohol use onset in adolescents. Addictive Behaviors, 14, 399-408.

Webster-Stratton, C. (1985). Predictors of treatment outcome in parent training for

conduct disordered children. Behavior Therapy, 16, 223-243.

Wechsler, H., & Thum, D. (1973). Teenage drinking, drug use, and social correlates. Journal of Studies on Alcohol, 34, 1220-1227.

Weist, M. D., Ollendick, T. H., & Finney, J. W. (1991). Toward the empirical validation of treatment targets in children. Clinical Psychology Review, 11, 515-538.

Wells, L. E., & Rankin, J. H. (1988). Direct parental controls and delinquency. Criminology, 26, 263-285.

West, M. O. & Prinz, R. J. (1988). Parental alcoholism and childhood psychopathology. In S. Chess, A. Thomas, & M. E. Hertzig (Eds.), Annual Progress in Child Psychiatry and Child Development (pp. 278-314). New York: Brunner/Mazel, Inc.

Whipple, E., Fitzgerald, H. E., & Zucker, R. A. (1995). Parent-child interactions in alcoholic and non-alcoholic families. American Journal of Orthopsychiatry, 65, 153-159.

Wilkins, W. (1973). Expectancy of therapeutic gain: An empirical and conceptual critique. Journal of Consulting and Clinical Psychology, 40, 69-77.

Williams, C. N. (1987). Child care practices in alcoholic families. Alcohol Health and Research World, Summer, 74-77,94.

Winans, T., & Cooker, P. G. (1984). The effects of parent education on the marital dyad: An examination of systems theory. Journal of Marital and Family Therapy, 10, 423-425.

Windle, M. (1989). Adolescent temperament: Childhood problem precursors and problem behavior correlates. Paper presented at the Annual Meeting of the American Academy of Child and Adolescent Psychiatry.

Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. Journal of Applied Behavior Analysis, 11, 203-214.

Wolfe, D. A., Jaffe, P., Wilson, S. K. & Zak, L. (1985). Children of battered women: The relation of child behavior to family violence and maternal stress. Journal of Consulting and Clinical Psychology, 53, 657-665.

Zucker, R. A. (1976). Parental influences on the drinking patterns of their children. In M. Greenblatt & M. A. Schuckit (Eds.), Alcoholism problems in women and children. New York: Grune & Stratton.

Zucker, R. A. (1987). The four alcoholisms: A developmental account of the etiologic process. In P. C. Rivers (Ed.), Alcohol & addictive behaviors. Lincoln: University of Nebraska Press.

Zucker, R. A. (1991). Scaling the developmental momentum of alcoholic process via the Lifetime Alcohol Problems Scores. Alcohol and Alcoholism, 1, 505-510.

Zucker, R. A. (in press). Pathways to alcohol problems and alcoholism: A developmental account of the evidence for multiple alcoholisms and for contextual contributions to risk. In R. A. Zucker, J. Howard, & G. M. Boyd (Eds.), The development of alcohol problems: Exploring the biopsychosocial matrix of risk. Rockville, MD: National Institute on Alcohol Abuse and Alcoholism.

Zucker, R. A., Constance, M. W., Baxter, J. A. & Noll, R. B. (1984, Oct). Differences in interpersonal and individual psychopathology in young families at high risk for the development of alcoholism. Paper presented at the Society for Life History Research in Psychopathology meetings, Johns Hopkins University, Baltimore, MD.

Zucker, R. A., Ellis, D. A., & Fitzgerald, H. E. (1994a). Developmental evidence for at least two alcoholisms: I. Biopsychosocial variation among pathways into symptomatic difficulty. Annals of the New York Academy of Sciences, 708, 134-146.

Zucker, R. A., Ellis, D. A., & Fitzgerald, H. E. (1994b). Other evidence for at least two alcoholisms: II. The case for lifetime antisociality as a basis of differentiation. Unpublished manuscript, Michigan State University, East Lansing, MI.

Zucker, R. A., & Fitzgerald, H. E. (1991). Early developmental risk factors and risk for alcohol problems. Alcohol Health and Research World, 15, 18-24.

Zucker, R. A., Fitzgerald, H. E., & Moses, H. D. (1995). Emergence of alcohol problems and the several alcoholisms: A developmental perspective on etiologic theory and life course trajectory. In D. Cicchetti & D. J. Cohen (Eds.), Manual of developmental psychopathology, Volume 2. New York: Wiley.

Zucker, R. A., Maguin, E. T., Noll, R. B., Fitzgerald, H. E., & Klinger, M. T. (1990, Aug). A prevention program for preschool children of alcoholics: Design and early effects. Paper presented at the Annual Meeting of the American Psychological Association, Boston, MA.

Zucker, R. A., & Noll, R. B. (1980a). The antisocial behavior checklist. Unpublished instrument, Michigan State University, Department of Psychology, East Lansing, MI.

Zucker, R. A., & Noll, R.B. (1980b). Drinking and drug history. Unpublished instrument, Michigan State University, Department of Psychology, East Lansing, MI.

Zucker, R. A., & Noll, R. B. (1987). The interaction of child and environment in the early development of drug involvement: A far ranging review and a planned very early intervention. Drugs and Society, 1, 1-34.

Zucker, R. A., Noll, R. B., Cruise, K., Kriegler, J., Patricia, W., & Mitchell, C. (1985). A program for the prevention of conduct disorders: Intervention manual. Unpublished manuscript, Michigan State University, Department of Psychology, East Lansing, MI.

Zucker, R. A., Noll, R. B., Draznin, T. H., Baxter, J. A., Weil, C. M., Theado, D. P., Greenberg, G. S., Charlot, C., & Reider, E. (1984a, Apr). The ecology of alcoholic families: Conceptual framework for the Michigan State University Longitudinal Study.

Presented at the National Council on Alcoholism National Alcoholism Forum, Detroit, MI.

Zucker, R. A., Noll, R. B., & Fitzgerald, H. E. (1988). Multiple risk child outreach program. Unpublished manuscript, Michigan State University, East Lansing, MI.

Zucker, R. A., Noll, R. B., Fitzgerald, H. E., & Maguin, E. T. (1989). The prevention of conduct problems in young alcoholic families. Unpublished manuscript, Michigan State University, Departments of Psychology and Pediatrics and Human Development, East Lansing, MI.

Zucker, R. A., Weil, C. M., Baxter, J. A., & Noll, R. B. (1984b, Oct). Differences in interpersonal and individual psychopathology in young families at high risk for the development of alcoholism. Presented at the Society for Life History Research in Psychopathology meetings: Johns Hopkins University, Baltimore, MD.