

A Longitudinal Study of Parenting as a Protective Factor for Children of Alcoholics*

PATRICK J. CURRAN, PH.D., AND LAURIE CHASSIN, PH.D.[†]

Graduate School of Education, 2318 Moore Hall, Box 951521, University of California, Los Angeles, Los Angeles, California 90095-1521

ABSTRACT. *Objective:* This study examined whether maternal parenting behaviors might serve to protect, or buffer, a child from the potentially negative effects associated with an alcoholic father. *Method:* This hypothesis was tested with a community sample of adolescent children of alcoholics and a demographically matched comparison group of children with nonalcoholic parents (total $N = 278$, 55% male). Three dimensions of parenting were considered: monitoring of child behavior, consistency of discipline, and social support. These dimensions were used in both cross-sectional and longitudinal regression analyses to pre-

dict child externalizing symptomatology, alcohol use and drug use. *Results:* Cross-sectional results supported independent effects of parenting on child outcomes, but produced limited support for the buffering hypothesis. Longitudinal analyses revealed no prospective effects of parenting and no support for the buffering hypothesis. *Conclusions:* Findings suggest that both parents influence child development outcomes, but that the influence of one parent does not depend upon the influence of the other parent. (*J. Stud. Alcohol* 57: 305-313, 1996)

CHILDREN of alcoholic parents (COAs) are at a higher risk for a wide range of negative outcomes compared to children of nonalcoholic parents (West and Prinz, 1987). COAs have been shown to experience increased somatic complaints, depression and anxiety (Moos and Billings, 1982; Steinhausen et al., 1984; Steinhausen and Huth, 1982), lower academic achievement and lower verbal ability (Sher et al., 1991), increased antisocial behaviors (Merikangas et al., 1985) and increased alcohol and substance use (Chassin et al., 1991; Merikangas et al., 1985; Russell et al., 1985). However, although COAs as a group are clearly at elevated risk for negative outcomes, most COAs do not develop clinical disorders and show normal psychosocial development (Clair and Genest, 1987; Heller et al., 1982). Little is known about the specific resources these successfully developing children have available to them that their less fortunate peers do not. Identification of these protective factors is important both for understanding the determinants of child adjustment as well as for the design and implementation of successful intervention programs.

Protective factors serve to moderate, or buffer, the negative influences of parental alcoholism on the child's development (Hawkins et al., 1992; Rogosch et al., 1990). Previous research on COAs has suggested the existence of protective factors involving characteristics of the family en-

vironment (Wolin et al., 1979, 1980), social support (Benson and Heller, 1987) and the child's own coping behaviors (Clair and Genest, 1987). However, there have been several problems associated with previous examinations of protective factors in children of alcoholics including use of small sample sizes, recruiting alcoholics from treatment programs, or using offspring report to ascertain parental alcoholism (Sher, 1991).

Most importantly, few studies have utilized appropriate analytic techniques to properly test for buffering effects (Rogosch et al., 1990). Protective factors are thought to moderate the negative effects of parental alcoholism on child development (Hawkins et al., 1992). To test for moderation, the protective factor must interact with the risk factor. That is, the multiplicative term must be tested between the protective factor and the risk factor (Baron and Kenny, 1986). Simply demonstrating a significant relation between the protective factor and the outcome within an alcoholic family is not sufficient. It must be shown that the moderating variable works *differently* for families with an alcoholic parent compared to those without (Sher, 1991). Accordingly, to test for such an effect, a sample must contain both alcoholic and nonalcoholic parents. Although several studies have discussed the theory of buffering, few have actually tested for it.

One potentially important protective factor involves increased efforts by the nonalcoholic parent to compensate for parenting deficiencies in the alcoholic parent. It has long been known that decrements in parenting behavior such as impaired parent control and nurturance are associated with subsequent problem behaviors in the child (Dishion et al., 1988; Kandel, 1990; Maccoby and Martin, 1983). Although an extensive literature has documented the main effects of parenting on child development (Maccoby and Martin, 1983;

Received: January 18, 1995. Revision: July 10, 1995.

*This study was supported by grant DA05227 from the National Institute on Drug Abuse to Laurie Chassin and Manuel Barrera, Jr. A version of this article was presented at the 1991 biennial meeting of the Society for Research on Child Development in Seattle, Washington.

[†]Laurie Chassin is with the Department of Psychology, Arizona State University, Tempe, Ariz.

Rollins and Thomas, 1979), far less attention has focused on the notion that parenting characteristics might interact with one another in such a way that one parent might be able to compensate for deficiencies in the remaining parent, especially when those deficiencies are due to alcoholism.

In one of the very few attempts to test for such a buffering effect, McCord (1988) reported a longitudinal study of alcoholic and nonalcoholic fathers and their sons. She found that sons who had experienced higher levels of maternal control were significantly less likely to become alcoholic themselves. However, this effect did not depend upon the father's alcoholism diagnosis. Maternal control was an important predictor of the child's later alcoholism diagnosis, but the strength of this relation did not differ in families with an alcoholic father. Thus, maternal control was not found to buffer the child from the negative effects associated with the father's alcoholism diagnosis.

Although these findings are intriguing, they do have a potential limitation. Given the data available, McCord (1988) was able to only partially test for buffering by examining the interaction between maternal control and paternal alcoholism diagnosis. She was not able to test the interaction between maternal control, paternal control and paternal alcoholism diagnosis. Although the strength of the prediction of child alcoholism from maternal control was independent of paternal alcoholism diagnosis, the effect of maternal control may instead have been dependent upon the father's own level of control. A buffering model would predict that maternal control would show a stronger relation with the child outcome behavior at lower levels of paternal control, and this would be particularly salient in families with an alcoholic father.

The current study tested whether maternal parenting behaviors would buffer the impact of paternal alcoholism on child development and is characterized by a number of advantages over previous COA research. First, a community-based sample was used, thus avoiding many of the problems associated with oversampling parent and child pathology when recruiting from hospital or treatment settings (Sher, 1991). Second, all of the proposed hypotheses were tested both cross-sectionally and longitudinally, thus increasing the strength of the inferences to be made regarding temporal precedence and prospective prediction. Third, formal DSM-III alcoholism diagnoses were obtained from face to face interviews with both parents thus avoiding the problem of relying on offspring report. Fourth, the use of multiple reporters (mother, father and child) allows for decreased reporter bias and increased confidence in the validity of the measured constructs. Finally, multiple child outcome measures were considered, thus increasing the external validity of the findings.

The interactive relations between maternal and paternal parenting behaviors were examined in families with and in those without an alcoholic father. Three parenting characteristics were considered: monitoring of child behavior,

consistency of discipline, and social support. These three dimensions have been shown to be important components of the parenting process (Patterson, 1986) and have been linked to many child outcomes including adolescent alcohol use, drug use and antisocial and externalizing behaviors (Baumrind, 1991; Dishion and Loeber, 1985; Patterson, 1986). Accordingly, three child outcome variables were considered: adolescent externalizing symptomatology, alcohol use and drug use.

Consistent with a buffering hypothesis, we predicted that mother's monitoring, social support and consistency of discipline would be more strongly related to the child outcome behaviors given lower levels of father's monitoring, social support and consistency of discipline. Further, these interactions between mother's and father's parenting were expected to be particularly salient in homes with an alcoholic father compared to those without.

Method

Subjects

The sample for the current study was drawn from Years 2 and 3 of a 3-year longitudinal study.¹ The total sample at Time 1 consisted of 454 adolescents aged 10.5 to 15.5 years (average age = 12.7 years) and their parents. Of these adolescents, 246 had at least one biological alcoholic parent who was also a custodial parent (COAs), and the remaining subjects were 208 demographically matched adolescents with no biological or custodial alcoholic parents (controls). Of these 454 adolescents, 449 (99%) were interviewed at Time 2 and 445 (98%) were interviewed at Time 3. Because the current study focused on the interaction between maternal and paternal parenting, 61 single-parent families were excluded. Of the remaining two-parent families, 87 fathers and 18 mothers were not interviewed at either Time 2 or Time 3 and were also excluded. Because of the low incidence of maternal alcoholism in this subsample ($n = 28$), families with alcoholic mothers were excluded from the analyses.

The final sample used for the current analyses consisted of 278 families (134 COAs and 144 controls). The average age at Time 2 was 13.6 years and 55% of the adolescents were male. Although these data were taken from Waves 2 and 3 of the project, for clarity these will be referred to as Time 1 and Time 2 for the remainder of this article.

Recruitment procedures

The recruitment procedures are presented in detail elsewhere (Chassin et al., 1991, 1992). COA families were recruited using court records (full sample = 103), wellness questionnaires from a health maintenance organization (full sample = 22) and community telephone surveys (full sample = 120). One family was referred by a local VA Hospital. Screening and recruitment was done by research team mem-

bers (or by participating agencies when required because of confidentiality concerns).

COAs had to meet the following criteria: white or Hispanic ethnicity, Arizona residency, ages 10.5-15.5 years, English-speaking and having no cognitive limitations that would preclude interview (e.g., severe mental retardation or psychosis). Finally, direct interview data had to confirm that a biological and custodial parent met DSM-III criteria for alcohol abuse or dependence lifetime diagnoses using the Diagnostic Interview Schedule (DIS) or Family History Research Diagnostic Criteria (FH-RDC), based on reports by the unimpaired parent (if the alcoholic parent was not interviewed).

Demographically matched control families were recruited using telephone interviews. When a COA subject was recruited, reverse directories were used to locate families living in the same neighborhood. Families were screened to match the COA subject in ethnicity, family composition, target child's age (within 1 year) and SES (using the property value code from the reverse directory). Direct interview data were used to confirm that neither biological nor custodial parents met DSM-III criteria (or FH-RDC criteria) for lifetime diagnoses of alcohol abuse or dependence.

Recruitment biases because of selective contact with subjects or subject refusals are discussed in detail elsewhere (see Chassin et al., 1991, 1992). Although contact rates were low (38.3% from archival records and 44.2% from reverse directories), participation rates were high (72.8% of eligible COA families and 77.3% of eligible control families participated). Analyses to assess participation bias found that the sample was unbiased with respect to alcoholism indicators that were available in archival records (e.g., blood alcohol concentration at the time of the arrest, Michigan Alcoholism Screening Test results). However, subjects who refused participation were more likely to be Hispanic and, if there was an arrest record, more likely to be married at the time of the arrest. Although the magnitude of the bias was small and unrelated to archival indicators of alcoholism, some caution is warranted in generalization.

Measures

Independent variables

Demographic variables. Child age and gender were used as control variables in all regression equations.

Paternal alcoholism. Lifetime DSM-III diagnoses of alcoholism (abuse or dependence) were obtained using a computerized version of the Diagnostic Interview Schedule (DIS, Version III) (Robins et al., 1981). For the current analyses, paternal alcoholism was a dichotomous variable reflecting the presence or absence of diagnosis.

Mother and father monitoring of child behavior. The extent to which parents monitored their child's behavior in the past 3 months was assessed by mother and father self-report of three items: "I had a pretty good idea of (the child's) plans

for the day"; "I had a pretty good idea of (the child's) interests, activities, and whereabouts"; and "I know where (the child) was and who he/she was with when he/she was not at home." The response scale ranged from (1) strongly disagree to (5) strongly agree. A single score was computed for each parent using the mean of the three self-report items. Internal consistency (coefficient alpha) was .77 for fathers and .82 for mothers.

Mother and father consistency of discipline. The degree to which parents were consistent in their day to day discipline of the child within the past 3 months was assessed by mother and father self-report on five items drawn from the Children's Report of Parental Behavior Inventory (Schaefer, 1965). Sample items included "I soon forgot the rules I had made"; "I sometimes allowed (child) to do things I said were wrong"; and "I changed my mind to make things easier for myself." The response scale ranged from (1) strongly agree to (5) strongly disagree. A single score was computed for each parent using the mean of the five items. Internal consistency was .77 for fathers and .78 for mothers.

Mother and father social support to child. The level of social support provided to the child by the mother and father within the past 3 months was measured using both mother and father report on six items drawn from the Network of Relationships Inventory (Furman and Buhrmester, 1985). Sample items included, "How often do you do enjoyable things with (child)?" "How much do you treat (child) like he/she is admired or respected?" and "How much does (child) share his/her private feelings with you?" The response scale ranged from (1) little/none to (5) the most possible. A single score was computed for each parent using the mean of the six items. Internal consistency was .80 for fathers and .76 for mothers.

Dependent variables

Adolescent externalizing symptomatology. Adolescent externalizing symptomatology was assessed using the adolescent's self-report on 22 items drawn from the Achenbach Child Behavior Checklist (CBCL, Achenbach and Edelbrock, 1981). Sample items included, "I ran away from home"; "I started fights"; "I stole things outside of the home"; and "I destroyed things belonging to others." No externalizing items referred to either alcohol or drug use. The response scale ranged from (1) almost never to (5) almost always. The 22 items were averaged to create a single measure of child externalizing symptomatology. The internal consistencies for the Time 1 and Time 2 measures were .65 and .63, respectively.

Adolescent alcohol use. Adolescent alcohol use was assessed by the adolescent's self-reported frequency of alcohol use within the past 12 months.² Subjects reported their frequency of consumption of beer/wine and distilled spirits (2 items), frequency of consumption of five or more drinks in a row (1 item) and frequency of getting drunk (1 item). All items were close-ended with response options ranging from

TABLE 1. Zero order correlations for time 1 and time 2 predictor and criterion variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Mother's monitoring		.34*	.28*	.21*	.33*	.18*	-.19*	-.16*	-.21*	-.22*	-.25*	-.18*
2. Father's monitoring			.14*	.36*	.14*	.41*	-.16*	-.09	-.23*	-.23*	-.22*	-.15*
3. Mother's discipline				.24*	.23*	.14*	-.13*	-.09	-.08	-.06	-.15*	-.06
4. Father's discipline					.16*	.32*	-.25*	-.16*	-.13*	-.16*	-.13*	-.14*
5. Mother's social support						.16*	-.07	-.11	-.06	-.09	-.13*	-.09
6. Father's social support							-.13*	-.15*	-.11	-.15*	-.15*	-.17*
7. Time 1 externalizing symptomatology								.61*	.43*	.39*	.36*	.36*
8. Time 2 externalizing symptomatology									.29*	.41*	.15*	.25*
9. Time 1 alcohol use										.64*	.52*	.51*
10. Time 2 alcohol use											.41*	.46*
11. Time 1 drug use												.69*
12. Time 2 drug use												

Note: All parenting variables measured at Time 1; * $p < .05$; † $p < .01$.

(0) not at all to (7) every day. A single alcohol use score was calculated by summing the responses to the four items. As was expected with measures of substance use in early adolescence, this variable was not normally distributed. A reciprocal power transformation was used to provide a closer approximation to a normal distribution (Neter et al., 1990; Time 1 use transformed kurtosis = -1.07; Time 2 use transformed kurtosis = -1.6).

Adolescent drug use. Adolescent drug use was assessed using the subject's self-reported frequency of use of eight illicit drugs within the past 12 months. All items were closed-ended with response options ranging from (0) not at all to (7) every day. A single drug-use score was calculated by summing the responses to the eight items. As with the alcohol use measure, this variable was not normally distributed. A reciprocal power transformation was used to provide a closer approximation to a normal distribution (Time 1 use transformed kurtosis = 6.7; Time 2 use transformed kurtosis = 7.5).

Results

Cross-sectional hierarchical regressions

Table 1 presents the zero-order correlations among the parenting and outcome variables. Nine cross-sectional hierarchical regressions were estimated based on Time 1 data.³ This was done to examine the contemporaneous relations prior to extending the analyses longitudinally. Because of problems associated with potential multicollinearity and decreased statistical power, separate regressions were estimated for parent monitoring of child behavior, consistency of discipline and social support. Each of these parenting measures were used to predict adolescent externalizing symptomatology, alcohol use and drug use, thus resulting in a total of nine regression equations. All predictor variables were centered about their means to avoid multicollinearity when testing the interaction terms (Aiken and West, 1991). Standard regression diagnostics (Fox, 1991) revealed no problems with influential observations or excessive multicollinearity.

The predictor variables were entered into the equations in five hierarchical steps. Step 1 consisted of the child's age and gender and father's alcoholism diagnosis. Step 2 contained the main effects of the relevant maternal and paternal parenting variable. Step 3 introduced the two 2-way interactions between each parenting variable and paternal alcoholism diagnosis. Step 4 introduced the single 2-way interaction between the maternal and paternal parenting variables. Finally, Step 5 contained the 3-way interaction between the maternal parenting variable, the paternal parenting variable and paternal alcoholism diagnosis.

The significance of the main effects of the parenting variables was assessed in two ways. The first measured the *joint* contribution of both the maternal and paternal parenting measure on the outcome (e.g., the significant *f*-change statistic associated with the addition of Step 2). The second measured the *unique* relation between one of the parent's measures and the criterion variable above and beyond that of the second parent's measure (e.g., the relation between one parent's measure and the dependent variable after having partialled out the effects of the second parent's measure).

Time 1 externalizing symptomatology. The effects of father's alcoholism diagnosis and the child's age were significant in all three regressions predicting externalizing symptomatology (all p 's < .05; see Table 2). Younger children and children of alcoholic fathers reported higher rates of externalizing symptomatology. There were significant joint effects of maternal and paternal monitoring and maternal and paternal consistency of discipline ($p < .05$) but no joint effects of maternal and paternal social support. There was a significant unique effect for both paternal monitoring and paternal consistency of discipline ($p < .05$) and a marginally significant unique effect of paternal social support ($p < .09$). For both the joint and unique effects, higher levels of the parenting measures were associated with lower levels of externalizing behaviors. There was a single marginally significant 2-way interaction between maternal and paternal consistency of discipline ($p < .10$). Probing of the simple slopes (per Aiken and West, 1991) revealed that the negative relation between maternal consistency and child externalizing symptomatology

TABLE 2. Joint and unique effects of parenting and all interactions: Cross-sectional regression analyses

Predictors	Externalizing symptomatology	Alcohol use	Drug use
Control variables			
Age	$\beta = .14^*$	$\beta = .41^*$	$\beta = .25^*$
Gender	NS	NS	NS
Father's alcoholism diagnosis	$\beta = .26^*$	$\beta = .23^*$	$\beta = .13^*$
Monitoring			
Joint effects	$R^2\Delta = .03^*$	$R^2\Delta = .03^*$	$R^2\Delta = .06^*$
Unique mother	NS	$\beta = -.08^a$	$\beta = -.18^*$
Unique father	$\beta = -.13^*$	$\beta = -.12^*$	$\beta = -.13^*$
Interactions	NS	NS	
Mother by father's alc. diag.			$\beta = -.14^*$
Mother by father monitoring			$\beta = .08^a$
Final model adjusted R^2	.10 [†]	.23 [†]	.15 [†]
Consistency of discipline			
Joint effects	$R^2\Delta = .05^†$	NS	$R^2\Delta = .03^†$
Unique mother	NS	NS	$\beta = -.14^*$
Unique father	$\beta = -.19^†$	NS	NS
Interactions		NS	NS
Mother by father consistency	$\beta = .09^a$		
Final model adjusted R^2	.12 [†]	.20 [†]	.08 [†]
Social support			
Joint effects	NS	NS	$R^2\Delta = .03^*$
Unique mother	NS	NS	NS
Unique father	$\beta = -.10^a$	$\beta = -.09^a$	$\beta = -.14^*$
Interactions	NS	NS	NS
Final model adjusted R^2	.07 [†]	.20 [†]	.08 [†]

Note: β = standardized regression coefficient; NS = $> .10$; $^a p < .10$; $^* p < .05$; $^† p < .01$.

was slightly stronger at lower levels of paternal consistency. No other interactions were found in any of the regressions.

Time 1 alcohol use. Paternal alcoholism diagnosis and child age were strong positive predictors of child alcohol use in all three regressions (all p 's $< .05$; see Table 2). Older children and children of alcoholic fathers reported higher rates of alcohol use. There was a significant joint effect of maternal and paternal monitoring, but no joint effects of maternal and paternal consistency of discipline or maternal and paternal social support. Significant unique effects were found for paternal monitoring and a marginally significant unique effect for maternal monitoring and paternal social support ($p < .10$). For both the joint and unique effects, higher levels of the parenting measures were associated with lower levels of Time 1 alcohol use. No significant interactions were found in any of the regressions.

Time 1 drug use. Child age was positively associated with drug use such that older children reported higher rates of use (see Table 2). Paternal alcoholism was not related to drug use. Significant joint effects were found for all three parenting measures in the prediction of adolescent drug use. Significant unique effects were found for maternal and paternal monitoring, maternal consistency of discipline and paternal social support. Higher levels of monitoring, discipline and social support were associated with lower levels of Time 1 drug use. One significant interaction was found between maternal monitoring and paternal alcoholism diagnosis ($p < .05$), and one marginally significant interaction was found between maternal and paternal monitoring ($p < .10$). Probing of the simple slopes of the maternal monitoring by

paternal alcoholism diagnosis interaction revealed that maternal monitoring was negatively related to drug use, and this relation was stronger for COAs. Probing of the marginally significant interaction between maternal and paternal monitoring revealed that the negative relation between maternal monitoring and drug use was slightly stronger given lower levels of paternal monitoring.

Longitudinal hierarchical regressions

The longitudinal hierarchical regressions incorporated the same design as the cross-sectional analyses with two exceptions. First, the criterion, was measured 12 months after the predictors. Second, the Time 1 measure of the Time 2 criterion was included as a control variable, or measure of *stability* (Dwyer, 1983). Thus, the Time 1 parenting measure had to account for unique variance in the Time 2 criterion above and beyond the variance associated with the Time 1 measure of the criterion.

Time 2 externalizing symptomatology. The only significant effects found in any of the regressions predicting Time 2 externalizing symptomatology was Time 1 externalizing symptomatology (standardized β 's ranged from .59 to .61). This construct was highly stable over the 12-month period, and all variance above and beyond that associated with the stability path was attributable to error. There were thus no significant main effects or interactions.

Time 2 alcohol use. Father's alcoholism diagnosis and child's age significantly predicted Time 2 alcohol use in all three regression equations such that children of alcoholic fa-

thers and older children reported increased alcohol use at Time 2 ($p < .05$). Like Time 2 externalizing symptomatology, Time 2 alcohol use was also highly stable over time (standardized β 's ranged from .53 to .54). There were no joint effects of parenting, but there was a marginally significant unique effects of father's social support ($\beta = -.08, p < .09$) such that higher levels of social support were weakly associated with decreased levels of Time 2 alcohol use.

Time 2 drug use. Neither paternal alcoholism diagnosis nor child's age was related to Time 2 drug use. There were no joint or unique effects found for any of the three parenting measures, but there was one marginally significant three-way interaction found between maternal consistency of discipline, paternal consistency of discipline and paternal alcoholism diagnosis ($\beta = .09, p < .09$). Probing of the simple slopes revealed that the negative relation between maternal consistency of discipline and child drug use was slightly stronger at lower levels of paternal consistency of discipline, and this trend was more pronounced for children with an alcoholic father.

Considering father's current alcohol involvement

Overall, there was very limited support for the buffering hypothesis. One possible reason for the lack of effects may relate to the use of a lifetime measure of paternal alcoholism. Buffering effects may exist only in homes in which the father is currently involved with alcohol. To test this hypothesis, we eliminated 70 alcoholic families in which the alcoholic father did not report any alcohol-related social consequence or dependency symptoms as having occurred within the past year. All nine longitudinal regressions were re-estimated based on this subsample. No substantive differences were found in any of the nine regressions suggesting that the lack of findings was not due to the use of a lifetime measure of paternal alcoholism.

Discussion

This study tested the hypothesis that a mother's parenting behavior might buffer a child from the negative effects associated with an alcoholic father. This was examined both cross-sectionally and longitudinally using mother, father and child reports on three measures of parenting and three child outcome behaviors. The cross-sectional analysis revealed consistent relations between parenting and child outcomes, but limited support for the buffering hypotheses. The longitudinal analyses revealed no main effects of parenting and produced no support for the buffering hypotheses.

Main effects of parenting

Cross-sectional analyses. The strength of the relations between the three dimensions of parenting and the child outcome measures depended upon the specific outcome

considered. The most consistent relations were found in the cross-sectional prediction of child drug use. Similar to previous findings, the joint effects of maternal and paternal monitoring, consistency of discipline and social support were all significantly and inversely related to child drug use (Brook et al., 1986; Dishion and Loeber, 1985; Lamborn et al., 1991). Thus, higher monitoring of the child's behavior, greater consistency of discipline and larger amounts of social support provided to the child were all associated with lower child self-reported drug use. In comparison, only monitoring was found to be associated with child alcohol use, such that higher levels of monitoring were associated with lower levels of alcohol use. Finally, higher levels of monitoring and consistency of discipline were associated with lower levels of externalizing symptomatology, whereas no effects were found for parental social support.

It is interesting that the majority of the cross-sectional effects involved parental control but not support. All of the child behaviors considered here involved problem behaviors: drug use, alcohol use and externalizing symptomatology. The finding that parental control was more strongly associated with these problem behaviors is consistent with some previous work in this area (e.g., Brook et al., 1986; Patterson and Stouthamer-Loeber, 1984) but inconsistent with others (e.g., Barnes, 1990; Jessor and Jessor, 1977). Nearly all of these studies incorporated different operationalizations of parental support, and it is difficult to identify which aspects of support are related to problem behaviors and which are not. The measure of support used here was not related to these types of child outcome behaviors.

Longitudinal analyses. No main effects of parenting were found in any of the longitudinal regressions.⁴ This lack of prospective effects is consistent with some previous findings (Dishion et al., 1991; Jessor and Jessor, 1975) but inconsistent with others (McCord, 1979, 1988; Patterson and Bank, 1987; Windle, 1992). There are several possible reasons why we did not find support for the prospective effects of parenting. First, it is very important to identify the proper time lag of measurement when studying the interrelations of constructs over time (Gollob and Reichardt, 1987). The current study used a 12-month time period between measures, and it is possible that a shorter time lag would have been more sensitive to the prospective effects of parenting. Second, the lack of effects may have been attributable to a reversed direction of effect. That is, it is possible that child behaviors influence parenting behaviors, and not vice versa, as was tested here. Although evidence exists supporting this reversed directionality (Lytton, 1990; Newcomb and Bentler, 1988), the main focus of the current research was to test the interactive buffering hypothesis which dictated the estimation of the unidirectional effect of parenting predicting child outcome. It should be noted that more complex bidirectional effects might exist, but cannot be incorporated when testing the buffering interactions.

A final possible reason for the lack of prospective effects relates to the specific analytic design used. The longitudinal regressions as tested here provide a very stringent test of the hypothesis. Because the stability of the dependent variable is estimated prior to the assessment of the Time 1 predictors, any Time 1 predictor must account for unique variance in the dependent variable above and beyond that associated with the stability of the dependent variable. Given the high stabilities of the dependent measures over time, there was very little variance remaining with which to associate other Time 1 predictors. Although an unavoidable characteristic of this type of longitudinal design, the stringency of the test should be considered when interpreting the lack of prospective effects from the parenting variables.

Interactive effects of parenting

Of most importance to the current study were the interactive effects between mother's parenting, father's parenting and father's alcoholism diagnosis. Overall, little evidence was found in support of the buffering hypothesis. This is consistent with the prospective findings of McCord (1988) who found that lower levels of maternal control were associated with an increased likelihood of later alcoholism in the child, but maternal control was not found to interact with paternal alcoholism diagnosis. Both McCord's (1988) longitudinal data and the current cross-sectional findings suggest that the mother provides an important source of support and control that is positively related to the child's healthy development, the importance of which does not depend on the alcoholism status of the father.

One disadvantage of McCord's study was that she was not able to test the interaction between maternal control and paternal control. Thus, although maternal control did not interact with the father's alcoholism diagnosis, it might have instead interacted with the father's own control. The current study tested this possibility, but little cross-sectional and no longitudinal support was found for this hypothesis.

Only one statistically reliable interaction was identified in any of the cross-sectional or longitudinal analyses. There was an inverse relation found between Time 1 maternal monitoring and Time 1 child drug use, and this was significantly stronger given the presence of an alcoholic father. Additionally, there were two cross-sectional and one longitudinal interaction that were found to be marginally significant. Thus there is weak support for the buffering hypothesis but, given the large number of tests conducted and the lack of robustness of findings, these effects should be treated with great caution.

It was surprising that so little support was found for a buffering effect from the nonalcoholic mother, as previous evidence has indirectly suggested such an existence. For example, Wolin et al. (1979, 1980) found that the preservation of family rituals in the presence of an alcoholic parent's heavy drinking was associated with significantly lower problem drinking and less alcoholism in the child. These pre-

served rituals appeared to somehow protect the child against the negative influences resulting from the parent's alcoholism. There may be several reasons why similar effects were not found in the current study.

Most importantly, many previous studies of buffering have not formally tested for the existence of such effects. For example, both Wolin (1979, 1980) and Clair and Genest (1987) examined the relations of protective factors to outcomes within groups of COAs and controls, but neither study tested the interaction between the protective factor and the father's alcoholism diagnosis. This type of test is required for proper assessment of moderation (Aiken and West, 1991; Sher, 1991). The current study did formally test these interactions and no support was found for their existence. Thus, although the notion of buffering is an intriguing hypothesis, it may simply be that the mother plays a very important role in the development of the child, an influence that does not vary as a function of the father's alcoholism or parenting. However, there are several alternative explanations that should also be considered.

First, the lack of interactive effects may have been a function of the composition of the current sample. The sample comprised intact two-parent families who were willing to be interviewed at both Time 1 and Time 2. These inclusion criteria may have resulted in more mild forms of paternal alcoholism being reported here. Stronger maternal buffering effects might be found in families with more severe paternal alcoholism. It may be that there is a certain critical threshold to which the father's parenting behaviors might deteriorate, after which the unimpaired mother might then compensate for the father's lacking abilities. It is possible that the fathers in Wolin et al.'s study (1980) may have crossed this threshold whereas the fathers in the current study had not.

A second possible reason for the null findings relates to statistical power. It is possible that the current sample size was not large enough to detect an interaction if it were truly present. Of course additional subjects would increase the likelihood of finding a statistically significant effect, but there would be a corresponding increase in the likelihood of finding effects that are not particularly clinically meaningful. In the current data, each of the marginally significant interaction terms accounted for well under 1% of the total variance in the regression equations. Thus, although a larger sample would have identified these trends as statistically significant, it is not likely that these effects would be considered clinically meaningful.

Directions for future research

One limitation described earlier relates to the question of direction of effects. That is, do parents influence children, do children influence parents, or is there a bidirectional relationship between the two? Although other analyses of this same data set support a bidirectional relationship between the parent and child (Stice and Barrera, 1995), strong infer-

ences are difficult given the observational nature of the data. Future research would benefit, not only from the continued collection of longitudinal data, but also from the inclusion of experimental intervention designs in which changes in a treatment group can be compared to those of a control group. It is this type of experimental data that will allow for a much better understanding of the causal processes underlying the complex relationship between the parent and child. Future research would also benefit from the collection of data over multiple time points using shorter lags between assessments. This would result in increased statistical power to detect effects (Muthén and Curran, 1994) and would also allow for the use of powerful analytic techniques such as hierarchical linear modeling (Bryk and Raudenbush, 1992) or latent growth models (McArdle and Epstein, 1987; Muthén, 1991).

Summary

This article studied the relations between dimensions of mother's parenting, father's parenting and father's alcoholism diagnosis in the prediction of three problem child behaviors. Cross-sectional and longitudinal hierarchical regressions were used to test whether mother's parenting might serve to protect, or buffer, a child from the negative effects of the father's alcoholism diagnosis. Cross-sectional analyses revealed rather consistent relations between the main effects of parenting and problem child behaviors, particularly with regard to the control dimensions of parenting. Little cross-sectional support was found for the interactive buffering hypothesis. Longitudinal analyses revealed that child problem behaviors were highly stable over time, and there was little or no support for the buffering hypothesis. This lack of support might simply reflect that both parents provide an important influence on the development of the child, but the effects of one parent do not vary as a function of the second parent. However, issues such as sample composition, time lags, statistical power and choice of measures may also explain the lack of findings.

Acknowledgments

The authors thank Craig Colder, Andrea Hussong and Eric Styce for their valuable input.

Notes

1. These two time periods were chosen because the older ages of the subjects at Time 3 maximize the reported rates of adolescent substance use.
2. Note that for the cross-sectional analyses the independent variables were measured within the past 3 months while alcohol and drug use were measured within the past 12 months. This allowed the dependent measures to have the same time reference for both the cross-sectional and longitudinal analyses. To examine the potential effects of using the different time frame, all cross-sectional regressions were re-estimated using alcohol and drug use measured with the past 3 months. No substantive differences were found.

3. Cross-sectional regressions were also conducted on the Time 2 data. Because of the high degree of similarity between the cross-sectional analyses at both time points, only the Time 1 analyses are presented here.
4. It is important to note that longitudinal effects of parenting predicting child behavior have been identified by other investigators using a larger portion of this same data set (Stice and Barrera, 1995). However, these investigators focused explicitly on the longitudinal main effects of parenting, and not the interactive effects as examined here. Additionally, Stice and Barrera (1995) incorporated a much larger portion of the sample as well as a different analytic technique and different measures of both parenting and child outcome behaviors.

References

- ACHENBACH, T.M. AND EDELBROCK, C.S. Behavioral Problems and Competencies Reported by Parents of Normal and Disturbed Children Aged Four Through Sixteen, Monographs of the Society for Research in Child Development, Chicago: Univ. of Chicago Press, 1981.
- AIKEN, L.S. AND WEST, G.W. Multiple Regression: Testing and Interpreting Interactions, Newbury Park, Calif.: Sage Pubns., Inc., 1991.
- BARNES, G.M. Impact of the family on adolescent drinking patterns. In: COLLINS, R.L., LEANARD, K.E. AND SEARLES, J.S. (Eds.) Alcohol and the Family: Research and Clinical Perspectives, New York: Guilford Press, 1990, pp. 137-161.
- BARON, R.M. AND KENNY, D.A. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *J. Pers. Soc. Psychol.* 51: 1173-1182, 1986.
- BAUMRIND, D. The influence of parenting style on adolescent competence and substance use. *J. Early Adolesc.* 11: 56-95, 1991.
- BENSON, C.S. AND HELLER, K. Factors in the current adjustment of young adult daughters of alcoholic and problem drinking fathers. *J. Abnorm. Psychol.* 96: 305-312, 1987.
- BROOK, J.S., WHITEMAN, M., GORDON, A.S. AND COHEN, P. Dynamics of childhood and adolescent personality traits and adolescent drug use. *Dev. Psychol.* 22: 403-414, 1986.
- BRYK, A.S. AND RAUDENBUSH, S.W. Hierarchical Linear Models: Applications and Data Analysis Methods, Newbury Park, Calif.: Sage Pubns., Inc., 1992.
- CHASSIN, L., BARRERA, M., JR., BECH, K. AND KOSSAK, FULLER, J. Recruiting a community sample of adolescent children of alcoholics: A comparison of three subject sources. *J. Stud. Alcohol* 53: 316-320, 1992.
- CHASSIN, L., ROGOSCH, F. AND BARRERA, M. Substance use and symptomatology among adolescent children of alcoholics. *J. Abnorm. Psychol.* 100: 449-463, 1991.
- CLAIR, D.C. AND GENEST, M. Variables associated with the adjustment of offspring of alcoholic fathers. *J. Stud. Alcohol* 48: 345-355, 1987.
- DISHION, T.J. AND LOEBER, R. Adolescent marijuana and alcohol use: The role of parents and peers revised. *Amer. J. Drug Alcohol Abuse* 11: 11-25, 1985.
- DISHION, T.J., PATTERSON, G.R. AND REID, J.R. Parent and peer factors associated with drug sampling in early adolescence: Implications for treatment. In: RAHDERT, E.R. AND GRABOWSKI, J. (Eds.) Adolescent Drug Abuse: Analyses of Treatment Research, NIDA Research Monograph No. 77, DHHS Publication No. ADM 88-1523, Washington: Government Printing Office, 1988, pp. 69-93.
- DISHION, T.J., PATTERSON, G.R., STOOLMILLER, M. AND SKINNER, M.L. Family, school, and behavioral antecedents to early adolescent involvement with antisocial peers. *Dev. Psychol.* 27: 172-180, 1991.
- DWYER, J.H. Statistical Models for the Social and Behavioral Sciences, New York: Oxford Univ. Press, Inc., 1983.
- FOX, J. Regression Diagnostics, Newbury Park, Calif.: Sage Pubns., Inc., 1991.
- FURMAN, W. AND BUHRMESTER, D. Children's perceptions of the personal relationships in their social networks. *Dev. Psychol.* 21: 1016-1024, 1985.

- GOLLOB, H.F. AND REICHARDT, C.S. Taking account of time lags in causal models. *Child Dev.* 58: 80-92, 1987.
- HAWKINS, J.D., CATALANO, R.F. AND MILLER, J.Y. Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychol. Bull.* 112: 64-105, 1992.
- HELLER, K., SHER, K.J. AND BENSON, C.S. Problems associated with risk overprediction in studies of offspring of alcoholics: Implications for prevention. *Clin. Psychol. Rev.* 2: 183-200, 1982.
- JESSOR, R. AND JESSOR, S.L. Adolescent development and the onset of drinking: A longitudinal study. *J. Stud. Alcohol* 36: 27-51, 1975.
- JESSOR, R. AND JESSOR, S.L. *Problem Behavior and Psychosocial Development: A Longitudinal Study of Youth*. New York: Academic Press, Inc., 1977.
- KANDEL, D. Parenting styles, drug use, and children's adjustment in families of young adults. *J. Marriage Family* 52: 183-196, 1990.
- LAMBORN, S.D., MOUNTS, N.S., STEINBERG, L. AND DORNBUSCH, S.M. Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Dev.* 62: 1049-1065, 1991.
- LYTTON, H. Child and parent effects in boys' conduct disorder: A reinterpretation. *Dev. Psychol.* 26: 683-697, 1990.
- MCARDLE, J.J. AND EPSTEIN, D. Latent growth curves within developmental structural equation models. *Child Dev.* 58: 110-133, 1987.
- MACCOBY, E.A. AND MARTIN, J.A. Socialization in the context of the family: Parent-child interaction. In: HETHERINGTON, E.M. (Ed.) *Handbook of Child Psychology*, Vol. 4: Socialization, Personality and Social Development. New York: John Wiley & Sons, Inc., 1983, pp. 1-101.
- MCCORD, J. Some child-rearing antecedents of criminal behavior in adult men. *J. Pers. Soc. Psychol.* 37: 1477-1486, 1979.
- MCCORD, J. Identifying developmental paradigms leading to alcoholism. *J. Stud. Alcohol* 49: 357-362, 1988.
- MERIKANGAS, K.R., WEISSMAN, M.M., PRUSOFF, B.A., PAULS, D.L. AND LECKMAN, J.F. Depressives with secondary alcoholism: Psychiatric disorders in offspring. *J. Stud. Alcohol* 46: 199-204, 1985.
- MOOS, R.H. AND BILLINGS, A.G. Children of alcoholics during the recovery process: Alcoholic and matched control families. *Addict. Behav.* 7: 155-163, 1982.
- MUTHÉN, B.O. Analysis of longitudinal data using latent variable models with varying parameters. In: COLLINS, L.M. AND HORN, J.L. (Eds.) *Best Methods for the Analysis of Change: Recent Advances, Unanswered Questions, Future Directions*. Washington, D.C.: American Psychological Association, 1991, pp. 1-17.
- MUTHÉN, B. AND CURRAN, P.J. Power to Detect Intervention Effects in Growth Modeling. Paper presented at the Workshop on Scientific Structure for the Emerging Field of Prevention Research, Johns Hopkins University, December 5-6, 1994.
- NETER, J., WASSERMAN, W. AND KUTNER, M.H. *Applied Linear Statistical Models: Regression, Analysis of Variance, and Experimental Designs*, 3d Edition, Homewood, Ill.: Irwin, 1990.
- NEWCOMB, M.D. AND BENTLER, P.M. Impact of adolescent drug use and social support on problems of young adults: A longitudinal study. *J. Abnorm. Psychol.* 97: 64-75, 1988.
- PATTERSON, G.R. Maternal rejection: Determinant or product for deviant child behavior? In: HARTUP, W.W. AND RUBIN, Z. (Eds.) *Relationships and Development*. Hillsdale, N.J.: Lawrence Erlbaum Assocs., Inc., 1986, pp. 73-94.
- PATTERSON, G.R. AND BANK, L. When is a nomological network a construct? In: PETERSON, D.R. AND FISHMAN, D.B. (Eds.) *Assessment for Decision*. New Brunswick, N.J.: Rutgers Univ. Press, 1987, pp. 249-279.
- PATTERSON, G.R. AND STOUTHAMER-LOEBER, M. The correlation of family management practices and delinquency. *Child Dev.* 55: 1299-1307, 1984.
- ROBINS, L.N., HELZER, J.E., CROUGHAN, J. AND RATCLIFF, K.S. National Institute of Mental Health Diagnostic Interview Schedule: Its history, characteristics, and validity. *Arch. Gen. Psychiat.* 38: 381-389, 1981.
- ROGOSCH, F., CHASSIN, L. AND SHER, K.J. Personality variables as mediators and moderators of family history risk for alcoholism: Conceptual and methodological issues. *J. Stud. Alcohol* 51: 310-318, 1990.
- ROLLINS, B.C. AND THOMAS, D.C. Parental support, power, and control techniques in the socialization of children. In: BURR, W., HILL, R., NYE, F. AND REISS, I. (Eds.) *Contemporary Theories about Family* (Vol. 1). New York: Free Press, 1979.
- RUSSELL, M., HENDERSON, C. AND BLUME, S.B. *Children of Alcoholics: A Review of the Literature*. New York: Children of Alcoholics Foundation, Inc., 1985.
- SCHAEFER, E.S. Children's reports of parental behavior. *Child Behav.* 36: 413-424, 1965.
- SHER, K.J. *Children of Alcoholics: A Critical Appraisal of Theory and Research*. Chicago: Univ. of Chicago Press, 1991.
- SHER, K.J., WALITZER, K.S., WOOD, P.K. AND BRENT, E.E. Characteristics of children of alcoholics: Putative risk factors, substance use and abuse, and psychopathology. *J. Abnorm. Psychol.* 100: 427-448, 1991.
- STEINHAUSEN, H.C., GOBEL, D. AND NESTLER, V. Psychopathology in the offspring of alcoholic parents. *J. Amer. Acad. Child Psychiat.* 23: 465-471, 1984.
- STEINHAUSEN, H.C., NESTLER, V. AND HUTH, H. Psychopathology and mental functions in the offspring of alcoholic and epileptic mothers. *J. Amer. Acad. Child Psychiat.* 21: 268-273, 1982.
- STICE, E. AND BARRERA, M. A longitudinal examination of the reciprocal relations between perceived parenting and adolescents' substance use and externalizing behaviors. *Devel. Psychol.* 31: 322-334, 1995.
- WEST, M.O. AND PRINZ, R.J. Parental alcoholism and childhood psychopathology. *Psychol. Bull.* 102: 204-218, 1987.
- WINDLE, M. A longitudinal study of stress buffering for adolescent problem behaviors. *Dev. Psychol.* 28: 522-530, 1992.
- WOLIN, S.J., BENNETT, L.A. AND NOONAN, D.L. Family rituals and the reoccurrence of alcoholism over generations. *Amer. J. Psychiat.* 136: 589-593, 1979.
- WOLIN, S.J., BENNETT, L.A., NOONAN, D.L. AND TEITELBAUM, M.A. Disrupted family rituals: A factor in the intergenerational transmission of alcoholism. *J. Stud. Alcohol* 41: 199-214, 1980.