Levels of Adult Alcohol Consumption Induced by Interactions With Child Confederates Exhibiting Normal Versus Externalizing Behaviors

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Investigated levels of distress and alcohol consumption in Ss interacting with problematic vs non-problematic child confederates. Social drinkers were randomly assigned to interact with boys trained to enact behaviors characteristic of either normal or attention-deficit disorder/conduct disorder (ADD/CD) children. Mood data were collected before and after the interaction. Ss engaged in ad lib beer consumption for 20 min, while anticipating another interaction with the same boy. Children in the ADD/CD role produced comparably distressed moods for both male and female Ss. However, only men drank to higher blood-alcohol levels in the ADD/CD vs. normal child condition. Results suggest that higher rates of drinking observed in fathers of ADD/CD children may be partly a function of their particular response to the distress associated with interactions with such children.

Considerable correlational evidence points to an elevated prevalence of parental alcohol problems in families containing children with behavior disorders, and the high rate of alcoholism reported for the fathers of attention-deficit disordered (ADD) and conduct disordered (CD) boys has often been singled out (e.g., Cantwell, 1972; Morrison & Stewart, 1971; Stewart, DeBlois, & Cummings, 1980). Further, both prospective and retrospective longitudinal studies have consistently shown that ADD/CD boys are at increased risk for developing drinking problems as adolescents and adults (e.g., Blouin, Borstein, & Trites, 1978; Feldman, Denhoff, & Denhoff, 1979; Robins, 1966; Tarter, 1981). Such connections may be attributable to common genetic factors in ADD/CD and alcoholism; perhaps both these disorders reflect some broader syndrome such as antisocial personality. This assertion seems less compelling, however, in view of the finding that above average rates of drinking problems also appear in the parents of children with other, less problematic child confederates. Social drinkers were randomly assigned to interact with boys trained to enact behaviors characteristic of either normal or attention-deficit disorder/conduct disorder (ADD/CD) children. Mood data were collected before and after the interaction. Ss engaged in ad lib beer consumption for 20 min, while anticipating another interaction with the same boy. Children in the ADD/CD role produced comparably distressed moods for both male and female Ss. However, only men drank to higher blood-alcohol levels in the ADD/CD vs. normal child condition. Results suggest that higher rates of drinking observed in fathers of ADD/CD children may be partly a function of their particular response to the distress associated with interactions with such children.

The question of how children in general, and deviant children in particular, might influence the drinking patterns of adults around them has received surprisingly little attention. This is remarkable because a number of theorists have speculated about just such a relationship. Abelson (1976), for instance, has commented that the mere presence of children may intensify problems of an alcoholic parent by forcing recognition of failures to meet responsibility, leading to increased guilt, lowered self-esteem, and, eventually, more drinking. Similar assertions that the stress of parenthood may put some children in a position to “drive parents to drink” or to drink more than they would otherwise have been made by others (e.g., Jackson, 1962; Jacob, Favorini, Meisel, & Anderson, 1978). Thus, although the major thrust of the theoretical literature as well as the popular media has been on how drinking problems in parents have adverse effects on children, this emphasis may be misleading in its neglect of the role of children in a reciprocal family system (see Bell, 1977). Of course, it would be unwarranted to hold ADD or CD children responsible for the drinking problems of their parents, but clearly children’s behavior problems can contribute to the very marital problems, economic hardships, social and recreational limitations, and general atmosphere of family conflict and disorganization from which children are said to suffer because their parents drink too much.

In recent years, a number of researchers have examined the distressing effects of deviant child behavior on the immediate...
gested that dealing with problem children is indeed a frustrating and upsetting experience that may precipitate or is at least associated with a variety ofpsychopathological responses in parents. Although these researchers have not explicitly identified an increase in alcohol-related problems among the dysfunctional responses of parents to deviant child behavior, the known connection between parental alcoholism and ADD/CD behavior in children makes this reaction very plausible. Thus, the primary purpose of this study was to explore further the link between ADD/CD behavior problems exhibited by children and drinking behaviors evident in those adults who have to deal with them.

In pursuing this goal, we departed from the purely correlational methods that have characterized previous research, and opted instead for an experimental methodology that could provide greater insight into the direction of interactional influences and that might offer some hope of elucidating the causes of the association between ADD/CD in children and alcohol problems in adults. The “functional pairs approach,” in which encounters between children and biologically unrelated adults are staged, has proved to be especially useful in similar investigations and was adopted accordingly (see Keller, 1981).

The choice of ad libitum drinking as a dependent measure was made for its naturalistic appeal and ease of integration into the purpose of the experiment as it was presented. Although subjects may have a range of different reasons for drinking the amounts they do under such circumstances, this is also true of less intrusive approaches such as taste-rating paradigms, which suffer from a structure and artificiality that may compromise external validity (see Marlatt, 1978, for a review of alternative behavioral techniques for assessment of drinking). Moreover, the free drinking measurement method has been used successfully in previous research on stress-induced drinking involving access to alcohol both before and after exposure to stress (e.g., Tucker, Vuchinich, & Sobell, 1981).

A laboratory analogue study was designed to determine the impact of normal versus ADD/CD child behavior on adult responses, including alcohol consumption. The interaction was controlled by training confederate children to enact specific behaviors representative of those seen in either normal or ADD/CD children. Following exposure to the child behavior manipulation, adults’ responses were evaluated. Subjective mood was measured on a variety of dimensions, and subjects were given an opportunity for ad lib consumption of alcoholic beverages. It was hypothesized that subjects would exhibit greater distress and more drinking in connection with exposure to children trained to enact deviant as opposed to normal roles. Equal numbers of male and female subjects were included in each condition, but no a priori hypotheses were formulated for the subject gender variable.

Method

Subjects

Potential subjects for the study were identified using data from a large-scale screening of approximately 2,000 undergraduate psychology students at the Florida State University. To be eligible, individuals were required to be of legal drinking age, to indicate that beer was their preferred type of alcoholic beverage, and to report consuming at least six “drinks” (12-oz beers, 4-oz glasses of wine, or 1-oz shots of distilled spirits) per week. Equal numbers of males and females meeting these criteria were chosen at random and were recruited by telephone to serve as subjects in an experiment examining “how drinking affects the way adults interact with children.” Telephone interviewers reviewed eligibility criteria, eliminated subjects with any history of medical or legal problems associated with alcohol, and scheduled appointments. Subjects were told to abstain from all food and beverages for at least 4 hr, and all drugs for at least 24 hr, prior to arrival at the experimental site. Transportation arrangements were also made to ensure their safe departure. Thirty-six participants were solicited in this way. Four of these subjects were eliminated during the study—one because of equipment failure and three because raters’ observations, debriefing, or other measures indicated ineffective child behavior manipulations. Data from the remaining subjects, 16 male and 16 female, were analyzed. These subjects reported consuming an average of 13.7 “drinks” per week. A 2 × 2 (Gender × Child Behavior) analysis of variance (ANOVA) for weekly alcohol consumption revealed no significant a priori differences in drinking across cells, although there was some indication of a tendency for males to report drinking slightly more than females, F(1, 28) = 3.23, p < .10.

Procedure

Experimental design. The main experimental hypothesis was investigated by having subjects interact with child confederates trained to behave either as a normal child or as an ADD/CD child. Half of the subjects of each sex interacted with a boy in the normal role and half interacted with a confederate in the deviant role. Subjects were reminded that the objective of the research was to examine the effects of drinking alcohol on adult–child interactions. They were told that they would have an initial, baseline interaction with a child and that they would then have an ad lib drinking period. This was to be followed by a second interaction with the same child, allowing a comparison of subjects’ behavior following alcohol consumption with their initial, sober interactions with the child. Because the main purpose of the study was to examine the effect of child behavior on adult drinking, however, the subjects did not interact with their confederate child a second time. Thus, the independent variable in the study was the confederate’s behavior (ADD/CD vs. normal) during the initial interaction, and the dependent variables were measures of the subjects’ distress and drinking responses following the first interaction while they were anticipating a second one with the same child.

Baseline measures. Subjects were told that because the study was investigating how characteristics unique to the individual (e.g., mood, drinking history, and physiological reactions to alcohol) might influence the relations between drinking and their interaction with the child, some of these variables would be measured intermittently during the course of the experiment. After signing informed consent forms, subjects were weighed and had an initial blood–alcohol level (BAL) breath test using a gas chromatograph (Model GC 1000, Luckey Laboratories, San Bernardino, CA). As a spring-loaded clip was attached to the index finger of each subject’s nondominant hand, he or she was told that 15 min of “normal” heart rate data was being collected for comparison with a later measure to be taken while drinking so that unique physiological reactions to alcohol could be determined.1 Then, a brief, 14-item drink-
ing habits questionnaire and a baseline Multiple Affect Adjective Checklist (MAACL; Zuckerman & Lubin, 1965) were administered to each subject. Following completion of pretesting, subjects were escorted to the child observation laboratory, where the adult–child interaction was to be conducted by a second experimenter.

**Confederate roles.** Two boys, one aged 10 and the other a young-looking 13, served as confederates. The boys were trained over a period of weeks in both normal and deviant (ADD/CD) styles of interacting with adults in the three situations described below. In the normal child role, the confederate behaved in a friendly, cooperative manner across all tasks. In contrast, in the deviant role the child exhibited a variety of specific uncooperative, unfriendly, noncompliant, distractible, overactive, bossy, disruptive, and interrupting behaviors. These behaviors were selected from the literature as characteristic of ADD/CD (e.g., Barkley, 1981; Whalen, Henker, Collins, Finck, & Dotemoto, 1979). Training also involved coaching the confederates to maintain a general demeanor consistent with their specific behavioral roles. Each confederate interacted with an equal number of adults in each condition.

During interaction sessions, observers behind a one-way window evaluated the confederate child’s behavior using a checklist designed to measure standardization of the two roles. Nineteen specifically scripted behaviors were checked for each role. An average of 17.5 of these behaviors were enacted during the interactions and in no case did a confederate perform fewer than 15 of the predetermined characteristic behaviors. Reliability of checklist observations was evaluated using a second, independent observer for 13 of the 32 interactions. Kappa was used to compute agreement between observers for each reliability check, resulting in a mean kappa of .79 across the 13 interactions.

**Adult–child interaction.** The experimenter began the interaction sequence by reading a set of general instructions that included an overview of the tasks. It was also suggested that the subject try to think of the boy as his or her own son and try to act naturally while seeking compliance when appropriate. In addition, subjects were expressly prohibited from using physical force with the children and were reminded that they would be observed continuously. Then, each of the following three interaction tasks was described and completed in turn. Subjects stepped out of the interaction room between each task to receive instructions.

In the cooperative task (5 min), the subject and the child worked cooperatively on an Etch-a-Sketch. Their task was to trace a path through a grid of chilled beer (Coors) and a frosted mug on a small table within easy reach of the subject’s dominant hand. The first glass of beer was poured.

Subjects were unobtrusively observed through a camouflaged one-way window during the following 20 min of ad lib drinking. Then, the experimenter reentered the room and announced with regret that the experiment would have to be terminated prematurely because the parent of the boy with whom the subject was to interact had unexpectedly picked him up early. Subjects were informed that they would need to wait an additional 20 min until a valid BAL test could be administered. The experimenter carefully saved the contents of all bottles and glasses for later measurement to determine how much beer the subject had consumed.

While waiting for the BAL test, subjects completed several exploratory personality and mood measures. As a manipulation check on the child confederate roles, a subset of 22 subjects also completed a Child Behavior Rating Scale consisting of 24 Likert-type, 7-point items adapted from the Behavior Problem Checklist (Quay & Peterson, 1983). Twelve items were taken from the Conduct Disorder scale and 12 were taken from the combined Attention–Problem–Immaturity and Motor Excess scales. The items selected described behaviors likely to occur during the experimental interaction. Total scores could range from 24 (best behavior) to 168 (worst behavior). In addition, on a single 7-point scale, subjects rated the overall pleasantness or unpleasantness of the interaction with the child. Finally, an open-ended Human Subjects Evaluation Form was completed.

**Debriefing and dismissal.** After the last questionnaire and final regular BAL breath sample were collected, an extensive debriefing was conducted. It began with broad inquiries about reactions, impressions, and any questions that may have arisen. More specific probes about the child’s behavior and its impact followed, along with a complete explanation of the experiment and justification for its methods. Especially for subjects exposed to the ADD/CD role, particular attention was given to discussion of why the child had been trained to behave as he did. Assurances were given that subjects’ performances in the interactions were not necessarily indicative of parenting competency. Subjects were dismissed and were transported home (as necessary) when their BALs were measured at least 0.04 and declining on two consecutive trials.

**Results**

Results fell into three main categories: (a) a manipulation check designed to evaluate the validity of confederates’ enact-
ments of their roles, (b) measures examining the differential impact of the child behavior on indicators of subjects' distress, and (c) drinking measures offering evidence of systematic changes in subjects' alcohol consumption as a function of the nature of the child behavior to which they were exposed. Findings pertinent to each kind of measure are reported in turn.

**Manipulation Check**

It has already been noted that the reliability with which confederates enacted specifically trained behaviors associated with condition roles was quite high. In addition, subjects completing the Child Behavior Rating Scale corroborated these findings and established the validity of the trained behaviors by assigning much higher ADD/CD ratings to the confederate in the deviant role condition ($M = 122.64, SD = 16.76$) than to the confederate in the normal role condition ($M = 49.82, SD = 9.78$). This main effect of child behavior was highly significant, $F(1, 14) = 153.24, p < .001$, in a $2 \times 2 \times 2$ (Subject Gender X Child Behavior X Confederate) ANOVA performed on scores from the Child Behavior Rating Scale. There were no significant interactions or main effects for subject gender or confederate. Because confederates were reliable in their role enactment and there were no significant effects due to the particular child enacting the assigned confederate role in this analysis, individual confederate was not considered as a variable in subsequent analyses.

**Measures of Distress**

For analyses involving the MAACL mood measures, the subjects' posttest (postinteraction) scores were analyzed in a $2 \times 2$ (Subject Gender X Child Behavior) analysis of covariance, with respective pretest (preinteraction) scores as the covariates. Results revealed a significant main effect of child behavior condition for all three subscales of the MAACL: Anxiety, $F(1, 27) = 6.68, p < .05$; Depression, $F(1, 27) = 6.22, p < .05$; and Hostility, $F(1, 27) = 21.51, p < .001$. Subjects reported themselves to be more anxious ($M = 10.00$), more depressed ($M = 16.75$), and more hostile ($M = 11.99$) following interactions with child confederates enacting the ADD/CD role as opposed to the normal role ($M$s = 8.13, 14.38, and 7.44, respectively). Neither the effect of subject gender nor its interaction with child behavior was significant on any of the mood measures.

Finally, a $2 \times 2$ (Subject Gender X Child Behavior) ANOVA was performed on the data from subjects who completed a 7-point scale for rating pleasantness or unpleasantness of the child interaction. The only significant effect was that interactions involving the ADD/CD child role were rated as markedly more unpleasant ($M = 6.09, SD = 0.83$) than those involving the normal role ($M = 1.73, SD = 0.65$), $F(1, 18) = 194.05, p < .001$.

**Drinking Measures**

Separate $2 \times 2$ (Subject Gender X Child Behavior) ANOVAs were performed for the volume of beer consumed by subjects and for the BALs they attained. The means and standard deviations for these two key measures are presented in Table 1. For total volume of beer consumed, there was clearly greater drinking by male subjects, $F(1, 28) = 10.78, p < .01$. More important, there was also a main effect for the child behavior condition, $F(1, 28) = 4.80, p < .05$. Subjects exposed to the ADD/CD confederate role consumed more beer than those who interacted with a boy in the normal role. The interaction of subject gender with child behavior also approached significance, $F(1, 28) = 4.03, p < .10$. This overall pattern of results was largely replicated for the BAL measure. However, in this case, the sole significant effect was for the Subject Gender X Child Behavior interaction, $F(1, 28) = 4.46, p < .05$. An examination of Table 1 suggests that this interaction resulted from greater intoxication following interaction with the ADD/CD child only for men. Post hoc comparisons of Child Behavior effects within Subject Gender confirmed this, $t = 2.57, p < .05$ for males; $t = 0.49, ns.$ for females.

**Table 1**

<table>
<thead>
<tr>
<th>Subject gender</th>
<th>ADD/CD</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total volume of beer consumed (in ml)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>585</td>
<td>569</td>
</tr>
<tr>
<td>Male</td>
<td>1,050</td>
<td>681</td>
</tr>
<tr>
<td>Blood alcohol level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.028</td>
<td>0.031</td>
</tr>
<tr>
<td>Male</td>
<td>0.043</td>
<td>0.030</td>
</tr>
</tbody>
</table>

Note: ADD/CD is attention-deficit disorder/conduct disorder; n = 8 per cell.

**Discussion**

Results from this study demonstrated that actual or anticipated interactions with a boy exhibiting ADD/CD behaviors produced distress in adults charged with his management. Further, these distressing interactions resulted in drinking to substantially higher BALs by men, but not women, when compared to the same measure of ad lib drinking for subjects exposed only to confederates in the "normal" role. These findings lend credence to the hypothesis that the experience of rearing a behaviorally disordered child may contribute to the higher prevalence of drinking problems evident in parents, especially fathers, of ADD/CD children.

Given the small sample size, the brevity and artificiality of the laboratory situation, and the fact that our subjects were college students rather than parents, the emotional impact of interac-
tions with the deviant child confederates was quite dramatic. Overall, both male and female subjects who interacted with boys in the ADD/CD role showed increases of approximately 23%, 16%, and 50% in anxiety, depression, and hostility scores, respectively, on the MAACL, relative to those who interacted with boys in the normal role condition. Indeed, many subjects spontaneously described the problematic interactions as surprisingly frustrating and upsetting. These findings are consistent with much of the recent literature indicating that children with behavior disorders can shape mothers’ responses to them (e.g., Barkley & Cunningham, 1979; Brunk & Henggele, 1984) and may contribute to depression and other psychopathology in their mothers (e.g., Greist et al., 1980). By suggesting that deviant child behavior acts as a stressor capable of precipitating or increasing adult alcohol consumption, our findings imply that child effects on parental psychopathology may extend to drinking problems, particularly where fathers are concerned. Of course, intermittent episodes of misbehavior by normal children might also contribute to isolated increases in emotional distress or acute drinking in parents who never exhibit any signs of psychopathology. Our point is that the results of this experiment are consistent with the hypothesis that chronic exposure to deviant behaviors similar to those of ADD/CD children could elevate the vulnerability of parents to drinking problems.

The fact that interactions with the ADD/CD confederate produced equal distress in both male and female subjects, but that only the men responded by drinking to higher BALs, is at once compatible with the relevant literature and illustrative of potentially important gaps in it. On the one hand, virtually all previous experiments examining the direct effects of deviant child behavior on parental responses have focused on mothers. Along with available correlational evidence, these studies suggest that mothers experiencing child-induced distress are liable to react with depressed affect. On the other hand, the vast majority of alcohol research investigating the connection between stress and drinking has employed only male subjects, typically showing that these subjects do tend to drink more when under psychosocial stress (Lang, 1983). Whatever the reasons for this emphasis on men in the stress-induced drinking literature, there are indications of potentially important gender differences in use of drinking to cope that deserve further exploration (see Wilsnack & Beckman, 1984). This seems to be especially important in interactions among child behavior, parental distress, and alcohol use, given the different norms that govern both drinking and child care behavior by men and women.

Because the present study was designed to maximize the potential impact of child behaviors on level of adult alcohol consumption, it left a number of specific causal questions unanswered. For example, the fact that the ad lib drinking period occurred after a first interaction with the confederate, but while anticipating another interaction with the same child, makes it impossible to determine the separate effects of the actual versus anticipated interactions on observed drinking. Of course, parents ordinarily find themselves in similar situations where both past and future interactions might influence their behavior, but from a theoretical point of view it would be interesting to disentangle these effects. This is particularly true because the separate effects might influence men and women differently. For instance, perhaps our female subjects did not drink to higher BALs because sex role stereotypic experiences and expectations regarding child care made them more motivated than males to maintain sobriety in order to be at their best during the anticipated second try at management of the problem child.

The confounding of actual with expected interactions also means that any conclusions about the possible functions of increased drinking by subjects in the ADD/CD condition must be speculative. They could have drunk more to reduce the general tension due to the first interaction or to dampen the stressfulness of a second interaction (Levenson, She, Grossman, Newman, & Newlin, 1980), to reduce self-awareness (Hull, 1981), or to implement a cognitive self-handicapping strategy (Jones & Berglas, 1978). Further, it should be noted that some of the distress experienced by subjects, and consequently part of their motivation for drinking, may be attributable to evaluation apprehension occasioned by the experimenters’ observation of their interactions. Although this possible artifact should influence all subjects, it could be more potent for subjects exposed to the difficult confederate and, thus, might precipitate greater drinking by them. Such an explanation does not, however, readily account for observed gender differences in level of intoxication. More refined analyses of the causes and functions of drinking in this paradigm must await further research.

Although the results of this study should be interpreted with caution because of the limitations outlined above, we believe they are intriguing. By using child behavior as the independent variable in a demonstration of stress-induced drinking, this study provides data to support consideration of reciprocal causation in documented correlations between parental drinking and offspring adjustment. Future research along these lines should involve real parents as well as prospective ones, including parents who either have or do not have an ADD/CD child of their own—two groups that differ in their risk for drinking problems. Finally, studies that assess differences in parenting behavior after direct manipulation of alcohol intoxication are needed to evaluate the other direction of reciprocal influences in parent–child interactions.

References


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