

1999

Family Interaction Styles of Children with Depressive Disorders, Schizophrenia-Spectrum Disorders, and Normal Controls

Elizabeth Hamilton

George Fox University, ehamilton@georgefox.edu

Joan Asarnow

University of California, Los Angeles

Martha Tompson

Boston University

Follow this and additional works at: http://digitalcommons.georgefox.edu/gscp_fac

 Part of the [Psychology Commons](#)

Recommended Citation

Hamilton, Elizabeth; Asarnow, Joan; and Tompson, Martha, "Family Interaction Styles of Children with Depressive Disorders, Schizophrenia-Spectrum Disorders, and Normal Controls" (1999). *Faculty Publications - Grad School of Clinical Psychology*. Paper 239. http://digitalcommons.georgefox.edu/gscp_fac/239

This Article is brought to you for free and open access by the Graduate School of Clinical Psychology at Digital Commons @ George Fox University. It has been accepted for inclusion in Faculty Publications - Grad School of Clinical Psychology by an authorized administrator of Digital Commons @ George Fox University. For more information, please contact arolfe@georgefox.edu.

Family Interaction Styles of Children with Depressive Disorders, Schizophrenia-Spectrum Disorders, and Normal Controls.

ELIZABETH BURNEY HAMILTON, Ph.D.^a

JOAN ASARNOW, Ph.D.^b

MARTHA TOMPSON, Ph.D.^c

^aAddress all correspondence to Elizabeth B. Hamilton, Ph.D., 3214 Grandview, San Angelo TX 76904.

^bProfessor, Department of Psychiatry and Biobehavioral Sciences, UCLA, Los Angeles CA.

^cFormerly a doctoral candidate at UCLA, Dr. Tompson is now an Assistant Professor, Department of Psychology, Boston University.

Family interaction processes during a problem-solving task were examined in children with depressive disorders, children with schizophrenia-spectrum disorders, and a normal control group of community children screened for the absence of psychiatric disorder. Major findings were: a) children with depressive disorders were more likely than children with schizophrenia-spectrum disorders and children with no psychiatric disorder to direct guilt-inducing comments toward their parents; and b) parents of children with schizophrenia-spectrum disorders were more likely to direct harsh critical comments toward the child than were parents of depressed children or parents of normal controls. In addition, children's and mothers' use of benign criticism was linked, while children's harsh criticism was associated with intrusion from the father, and children's self-denigrating comments were related to specific paternal criticism. Implications of these results for understanding transactional processes associated with childhood-onset depressive and schizophrenia-spectrum disorders are discussed.

Emerging data suggest that family environmental variables are potent predictors of outcome for depressed children. Notably, results from a recent study with depressed child psychiatric inpatients demonstrated that negative parental attitudes, as assessed by expressed emotion (EE) obtained at the time of the child's hospitalization, were strongly associated with outcome one year after hospital discharge (Asarnow, Goldstein, Tompson, & Guthrie, 1993). Whereas children returning to high-EE homes were likely to show persistent mood disorder during the first post-discharge year, children returning to low-EE homes were more likely to recover during the same period. Additionally, McCauley and Myers (1992), in their longitudinal sample of children and adolescents with major depressive disorders, reported that children's perceptions of their family relationships predicted level of psychosocial adjustment at a 3-year followup.

Several studies have also documented impairments in interpersonal functioning and family relationships among depressed children (for review, see McCauley & Myers, 1992). For example, studies with clinically depressed children have indicated that their family transactions are characterized by high levels of disagreement, low levels of support, insecure attachment to parents, and perceptions of high levels of conflict (Armsden, McCauley, Greenberg, et al., 1990; Cook, Asarnow, Goldstein, et al., 1990; Garber, Quiggle, Schlundt, 1991). Additionally, depressed children receive low levels of positive reinforcement and high-standard setting from their mothers (Cole & Rehm, 1986). Despite the promise of this work, it is important to note that most prior studies have employed interviews or questionnaires to assess family patterns. Because few studies have examined direct interactions, the question of whether the patterns described in families of depressed children reflect true differences in communication behaviors or are an artifact of perceptual biases shown by depressed children (McCauley, Mitchell, Burke, & Moss, 1988) remains to be resolved.

Studies that have employed comparison groups of children with other forms of psychiatric disorder have yielded mixed results. Whereas some studies report group differences, others have found similar patterns of family interaction for children with depressive and nondepressive disorders, underscoring the need for additional clarification of the extent to which interaction patterns show specificity to depressive disorders or, alternatively, are related to other environmental or clinical variables (Burbach, Kashani, & Rosenberg, 1989; Stark, Humphrey, Crook, & Lewis, 1990).

In conjunction with the fact that most depressed children live at home with their families, accumulating data emphasize the importance of further elucidation of the family interaction processes associated with childhood depression. The present study addresses this need by comparing direct family interactions in three groups: 1) families of children with depressive disorders (major depression or dysthymic disorders); 2) families of children with schizophrenia-spectrum disorders (schizophrenia or schizotypal personality disorder); and 3) families of normal controls screened for the absence of psychiatric disorder. The use of both psychiatric and normal comparison groups provides a means of examining whether observed interaction patterns are associated specifically with depression or are more generally related to severe psychiatric

disorder.

Because of prior work linking measures of EE to outcome, the present study aimed to clarify transactional processes that might be expected to contribute to the development and maintenance of critical and emotionally overinvolved attitudes, the two dimensions of the EE index. Thus, parent behavior toward the child was assessed using the affective style (AS) coding scheme developed by Doane, West, Goldstein, and colleagues (1981) to examine emotionally charged behaviors during a conflict resolution task. This schema was employed to provide an interactional measure that, like the expressed emotion index, focused on the dimensions of criticism and intrusiveness (hypothesized to be associated with the child's use of criticism and guilt induction within the interaction). Prior work with the AS coding scheme has found that AS was a significant predictor of outcome among adult schizophrenic and bipolar patients (Doane, Falloon, Goldstein, & Mintz, 1985; Miklowitz, Goldstein, Nuechterlein, et al., 1988). Additionally, AS proved to be a strong predictor of the onset of schizophrenia-spectrum disorders in adulthood among a group of disturbed but nonpsychotic adolescents (Doane et al., 1981).

The patient coping style (CS) coding scheme was used to assess the affective quality of the child's behavior. This coding system was originally developed to complement the AS scheme and, as such, focuses on similar dimensions of interactive behavior. Strachan, Feingold, Miklowitz, and Nuechterlein (1989) found that adult schizophrenic patients who revealed negative CS profiles, when compared to patients with more benign CS profiles, were significantly more likely to have parents with negative AS scores. A study of children at risk due to maternal psychopathology found that children's critical CS profiles were linked both to mother's negative affective behavior and to child affective disorder at followup (Hamilton, Hammen, Minasian, & Jones, 1993). These data underscore the bidirectional nature of family interactions, as well as the need to examine the behavior of all family members within context.

Three major hypotheses were examined in the present study. First, based on prior research suggesting more negativity in the families of depressed children, we predicted that depressed children would be more likely to show negative communication profiles reflecting high levels of criticism and/or guilt induction when compared to children in the schizophrenia-spectrum and normal comparison groups. Second, consistent with the hypothesis that negative family interactions constitute a general correlate of child disorder, we predicted that parents of both groups of disturbed children would show more negative affective behavior when compared to the parents of the normal control children. Finally, we predicted that negative parental interactive behavior would be associated with negative child interaction style regardless of child diagnosis because parents and children are expected to exert a reciprocal influence on each other.

METHODS

Subjects

Subjects were pre-adolescents to young adolescents, ages 7 to 14 years, and their parents. All children had been living with their primary caretaking parent or parents prior to participation in the study. Further, inclusion was contingent on the absence of mental retardation or developmental disabilities, and the absence of co-existing major medical illness.

Psychiatric Group

The psychiatric disordered group was obtained from the child inpatient services at the UCLA Neuropsychiatric Institute or affiliated hospitals (Asarnow et al., 1993). Families were asked to participate if their child met DSM-III criteria for a depressive disorder (major depression or dysthymia) or a schizophrenia-spectrum disorder (schizophrenia or schizotypal personality disorder).¹ A set of hierarchical rules for diagnostic classification were needed because of some overlap in diagnoses across the two major diagnosticspectrums. Notably, six cases presented with both depressive and schizophrenia-spectrum disorders. A hierarchical decision rule was set up based on the DSM-III convention that schizophrenia takes precedence over dysthymia (4 cases). Major depression took precedence over the less marked syndrome form of schizotypal personality disorder (2 cases). Using these guidelines the children in the psychiatric group were classified as follows: a) 21 children with depressive disorders (major depression, $n = 11$; dysthymic disorder, $n = 2$; major depression and dysthymic disorder, $n = 8$); and b) 18 children with schizophrenia-spectrum disorders (schizophrenia, $n = 10$; schizotypal personality disorder, SPD, $n = 8$). A detailed breakdown of demographic characteristics of the sample by diagnostic group is provided in Table 1.

Table 1
Demographic Characteristics of Children

	Depressed $n = 21$	SZ and SPD $n = 18$	Normal $n = 20$
Sex			
Boy	76% (16)	83% (15)	75% (15)

Girl	24% (5)	17% (3)	25% (5)
Age	10.82	9.78	9.83
(SD)	(1.73)	(1.88)	(1.59)
Ethnicity			
Caucasian	86% (18)	78% (14)	85% (17)
Other	14% (3)	22% (4)	15% (3)
Family Composition			
Dual	48% (10)	44% (8)	60% (12)
Single	52% (11)	56% (10)	40% (8)
SES Hollingshead	46.81	43.06	49.62
(SD)	(12.04)	(13.91)	(12.58)
Class I	29% (6)	22% (4)	40% (8)
Class II	52% (11)	44% (8)	40% (8)
Class III	5% (1)	11% (2)	10% (2)
Class IV	14% (3)	17% (3)	10% (2)
Class V	0% (0)	6% (1)	0% (0)

Note: Number of children and standard deviations (SD) are indicated within parentheses.

Normal Control Sample

A control sample of 20 children with no history of psychiatric disorder was obtained from the community. Parents were also screened for the absence of psychiatric disorder. Normal control subjects were recruited through announcements circulated throughout the community in various school bulletins, and from the Neuropsychiatric Institute (NPI) staff newsletter and the UCLA newspaper. Additionally, letters were sent out from a mailing list provided by both Big Brothers of Greater Los Angeles and a church-based community organization.

Initial telephone contacts were made to assess whether respondents met the criteria for inclusion in the control sample. The following screening questions were asked: 1) "Has your child ever had significant problems at school or with friends?"; 2) "Has your child ever been on medication for emotional or behavioral reasons?" If families responded negatively to these probes, they were invited to participate in the study. Each family was paid \$20 for its participation, and was also invited to participate in a free mini-seminar at the completion of the study.

The control sample was similar to the psychiatric sample in terms of gender, age, ethnicity, family composition (dual versus single parent), and socioeconomic class (SES), as assessed by the Hollingshead Four-factor Socioeconomic Index (1975). A detailed description of sociodemographic characteristic of the normal control group is provided in Table 1.

Design and Procedures

Diagnostic Information: For all psychiatric subjects in the sample, diagnoses were made on the basis of: 1) the K-SADS-E (Puig-Antich, Orvaschel, Tabrizi, & Chambers, 1983), a semi-structured interview conducted with the child, which allows for differential diagnosis of past and current psychiatric problems; 2) direct parent interviews using the K-SADS-E and/or a modified version of the Camberwell Family Interview designed to assess all symptoms required to make target diagnoses (Asarnow, 1981); and 3) comprehensive information available on each child, including results of other structured interviews and longitudinal observations of the child's clinical status during the course of hospitalization. A high interrater agreement on diagnostic judgments has been established on prior data using similar procedures, $\kappa = .82, p < .001$ (Asarnow & Carlson, 1985). Diagnoses were made by a trained child psychologist or psychiatrist who was blind to the family assessment data. Two clinicians had to agree independently on the child's diagnosis for the child to be included in the current sample.

Parents of the normal control children were also administered the K-SADS-E as a way of eliminating children with diagnosable psychiatric problems from the control group. Two subjects who initially passed the telephone screening were subsequently omitted from the study on the basis of the K-SADS, due to ADHD symptomatology.

Family Interaction Variables

Interaction Task: The interaction styles of children and parents were assessed using two 10-minute family conflict resolution tasks. For psychiatric subjects, this was administered during the time of initial hospitalization. For control

subjects, this was given at the time of the complete assessment battery. The procedures previously designed at the Family Assessment and Treatment laboratory were followed (Doane et al., 1981; Goldstein, Miklowitz, Strachan, et al., 1989). The family conflict task involves bringing the child and parent together to discuss and attempt to resolve a problem that has previously been identified as important for the family. Prior to the interaction, each family member was interviewed separately in order to identify relevant problems. After an issue was targeted, the interviewer told the family member to imagine that the person to whom the problem was addressed was sitting in the room, and to roleplay while being audiotaped. This audiotape was then taken to the respective family member who listened to the statement and was asked to respond briefly on audiotape. Two problem issues from both parent and child were generated using this method, and the experimenters then chose one issue from the child and one from a parent as cues for the interaction task. Family members were brought together into the lab where they listened to the audiotaped statements. They were asked to discuss each of the two issues for 10 minutes, to express thoughts and feelings about it, and to try to resolve the problem while the interviewer was out of the room. The order of the presentation of problem cues was counterbalanced across families. All interactions were both audio- and videotaped.

The family conflict interaction task was transcribed verbatim for coding purposes. A critical incident model of coding was employed. In applying both the CS and AS coding systems, the coding unit was designated as up to six lines of uninterrupted speech by an individual family member. If a person's speech exceeded six lines, each unit beyond the sixth line received a new code. One code only was assigned to each speech unit, and if dual codes were relevant, the more emotionally charged code was chosen. Raters were advanced undergraduate students completing an individualized research course at UCLA. They were blind to both the child's diagnostic status and to the specific hypotheses of the study. Extensive training was conducted, using previous transcripts of another sample of family interaction tasks. Child and parent interactional behaviors were coded by different teams of raters to avoid possible contextual confounds.

Coping Style Coding System: The CS coding system (Strachan, Feingold, Zaden, & Valone, 1989) was used to score the children's statements. The CS system was originally designed to capture ways that psychiatric patients respond to confrontive interaction, by assessing alternative responses to the parental AS codes of support, criticism, and intrusion. The CS system codes only those statements that fit criteria, rather than every utterance in an interaction sequence. Although seven codes are included within the CS scheme, previous research has suggested that autonomy and criticism are the dimensions that distinguish most clearly between patient coping styles (Strachan et al., 1989). Critical statements include benign and harsh criticism, as well as guilt induction. In earlier work, the three components of CS criticism have been explored as a single entity (Hamilton et al., 1993; Strachan et al., 1989). However, in the current study, child guilt induction and harsh criticism were examined separately because of our theoretical interest in whether these dimensions might be particularly characteristic of the depressed children. This decision was supported by the relatively high kappas obtained for these separate components of CS criticism: guilt induction, Cohen's kappa = .83, $p < .01$; harsh criticism, Cohen's kappa = .75, $p < .01$. Finally, the CS dimension of self-denigration was also examined because of the possible link between this type of interactional behavior and depression. Interrater reliability for the CS codes was established on 15 randomly selected transcripts against other raters who had been trained to detect specified criteria on the coding system. Overall, interrater reliability was: Cohen's kappa = .83, $p < .01$, ranging from .72 to .91 for the individual codes.

Affective Style Coding System: The parents' affective behavior was assessed using the affective style (AS) interaction coding system developed by Doane and colleagues (1981), which permits the systematic assessment of the quality and quantity of emotional, negatively toned remarks during direct interactions between the identified patient and family members. The AS scheme includes the following dimensions: 1) supportive statements; 2) critical statements, which can be either benign situational criticism or harsh personal criticism; 3) guilt-inducing statements; and 4) neutral intrusive statements. Interrater reliability for AS, as established on 15 randomly selected transcripts, was: kappa = .85, $p < .01$, ranging from .70 to .90 for individual codes.

Classification for both AS and harsh criticism alone was made on the basis of overall family style; that is, categorization was made solely on scores of the caregiving parent for one-parent families, and on scores for both parents in the two-parent families.² The family unit was designated as high AS if one or more parents were categorized as high AS, and as harshly critical if one or more parents made at least one harshly critical statement to the child (Miklowitz et al., 1988).

RESULTS

Preliminary Analyses

Preliminary analyses were conducted to address the issue of possible confounds, examining between-group differences in child gender, child age, ethnicity, family composition (single vs. dual-parent family), and the Hollingshead Four-Factor SES rating. Results of analyses of variance for dimensional variables and chi-square tests for categorical variables indicated no significant between-group differences, with similar group distributions on these variables. Additionally, overall, there were no associations between coping style (CS) profile measures and any of the sociodemographic variables. The association

between CS profiles and these variables was also examined within diagnostic group, using Fisher's exact tests to account for lower cell numbers. The only significant within-group difference was for gender within the schizophrenia-spectrum group (schizophrenia, SZ; and schizotypal personality disorder, SPD), since none of the 15 boys used harsh criticism, whereas two of the three girls did (Fisher's exact test, $p < .05$).

Across diagnostic groups, no association was found between parental affective style (AS) or harsh criticism alone and child gender, child age, child ethnicity, or SES. No relationship was reported between family composition and harsh criticism alone. However, benign AS families consisted of more dual-parent (75%) in comparison to single-parent (27%) families, while among negative AS families, 43% were dual-parent and 57% were single-parent families, $\chi^2(1, 59) = 4.07$, $p < .05$. Within separate diagnostic groups, there were no significant associations between either parental AS or harsh critical profiles and any of the sociodemographic variables.

Finally, the amount of speech produced by family members was examined to determine whether variations across diagnostic groups might exist, which could potentially confound the interaction variables. There were no differences in the number of speech utterances as a function of diagnostic status, $F(6, 50) = 1.42$, $p > .10$. Interestingly, there is a positive association between the amount of child's and mother's speech, $r = .87$, $p < .001$, $N = 59$, and the amount of child's and father's speech, $r = .38$, $p < .05$, $N = 30$.

Overview of Analyses

Hypotheses concerned three major questions: 1) diagnostic group differences in children's communication style, 2) diagnostic group differences in parental affective behavior, and 3) relationships between child and parent interactional style. For each research question, a profile approach was applied to address both diagnostic group differences and the association between child and parental communication style. Although alternative approaches to data analysis were considered, a profile method was chosen, consistent with previous protocols using the coping style and affective style measures (that is, Goldstein et al., 1989; Strachan et al., 1989). As Doane and Lewis (1984) have previously argued, sole reliance on means from raw data may sometimes obscure complex interactive patterns. A profile method may more clearly reflect idiosyncratic styles in family communication data because of the relatively small occurrence of low frequency yet emotionally potent interactive behaviors during a time-limited data collection procedure.

In general, prior procedures established for generating CS and AS profiles were employed. However, modifications were made because of our theoretical interest in interactional styles hypothesized to be associated with childhood depression. In particular, child guilt induction and harsh criticism were subsequently investigated as separate constructs since we speculated that guilt induction might be an especially salient feature of clinically depressed children. Parental harsh criticism was also examined as a separate construct since research had suggested the potency of criticism alone in predicting clinical outcome (Hooley, 1986).

Diagnostic group differences in children's interaction style: The first major question addressed in this study concerned whether children's interactional behavior would differ as a function of the child's diagnostic status. Similar to the methods developed by Strachan and his colleagues (1989), a profile approach was used. Classification of coping style was first generated according to whether the child was characterized by highest rates of either: 1) autonomous statements, 2) neutral (low rates of any category), 3) guilt induction, or 4) harsh criticism. This strategy parallels the categorization scheme used by Strachan and colleagues (1989), with the exception that we examined guilt induction and harsh criticism separately, rather than as one "critical" category.

Because of the small sample size available in some cells, CS cells were collapsed to form two CS profile categories, with a benign CS category created from autonomy and neutrality, and a negative CS category created from guilt and harsh criticism. As expected, an association was also found between the dichotomous CS profiles and diagnostic status, $\chi^2(2, 59) = 9.17$, $p < .05$ (see Table 2). The depressive group was more often classified as showing negative CS than either the schizophrenia-spectrum group, $\chi^2(1, 39) = 8.20$, $p < .01$, or the normal group, $\chi^2(1, 41) = 4.19$, $p < .05$. Distributions of CS profiles were similar, however, for the SZ and SPD group and the normal controls, $\chi^2(1, 38) = .93$, $p > .10$.

Table 2
Distributions of Child Coping Style Profiles by Diagnostic Groups

Child's CS Profiles	Child Diagnostic Status		
	Depressed $n = 21$	SZ and SPD $n = 18$	Normal $n = 20$
CS Profile			
Benign	8 (38%) ^a	15 (83%) ^b	14 (70%) ^b
Negative	13 (62%)	3 (17%)	6 (30%)
CS Guilt			

Low	8 (38%) ^a	15 (83%) ^b	13 (65%) ^b
High	13 (62%)	3 (17%)	7 (35%)
CS Harsh Criticism			
Low	14 (67%) ^a	16 (89%) ^a	18 (90%) ^a
High	7 (33%)	2 (11%)	2 (10%)

Note: Distributions sharing the same superscripts do not differ significantly.

Again, because of our theoretical interest in the depressed children's use of guilt induction and harsh criticism, separate profiles were then established solely on the basis of the presence of at least one guilt induction or one harsh criticism. A significant association between guilt induction and diagnostic status was revealed, $\chi^2(2, 59) = 8.54, p < .05$ (see Table 2). As predicted, depressed children were more likely to be classified as using guilt induction than were children with schizophrenia-spectrum disorders, $\chi^2(1, 39) = 8.20, p < .01$. While the normal controls tended to be less likely to use guilt induction than the depressed children, $\chi^2(1, 41) = 2.97, p < .09$, they did not differ from children in the schizophrenia-spectrum group, $\chi^2(1, 38) = 1.64, p > .10$. When profiles were based exclusively on the presence of harsh criticism from the child, interactions of depressed children were somewhat more likely to be characterized by harsh criticism of their parents than were interactions of normal children, $\chi^2(1, 41) = 3.26, p < .08$, but not than those of the SZ and SPD children, $\chi^2(1, 39) = 2.70, p > .10$. Children with schizophrenia-spectrum disorder and normal controls were similar in their use of harsh criticism, $\chi^2(1, 38) = .01, p > .10$.

Diagnostic group differences in parent's interaction style: The second major question addressed in the study concerned whether parental interactional behavior differed as a function of the child's psychiatric status. As noted previously, research using the affective style coding scheme generally uses a profile method. Previous studies have most commonly found that a cut-off of one harsh critical or guilt-inducing statement or six or more neutral intrusive comments is effective for AS classification (Doane et al., 1985; Miklowitz et al., 1988), although these divisions have sometimes been altered to reflect differences in sample characteristics (Miklowitz, Goldstein, Nuechterlein, et al., 1987; Strachan, Leff, Goldstein, et al., 1986). Results based on the standard AS cut-offs showed a difference in AS as a function of diagnostic group, $\chi^2(2, 59) = 6.44, p < .05$ (see Table 3). Parents of children with schizophrenia-spectrum disorders were more likely to be classified as negative than the normal group, $\chi^2(1, 38) = 5.29, p < .05$, but did not differ from the depressed group, $\chi^2(1, 39) = .47, p > .10$. There was a marginally significant difference between the depressed and normal groups, with a higher proportion of parents of depressed children tending to fall into the high AS category, $\chi^2(1, 41) = 3.19, p < .10$. These distributions are presented in Table 3.

Table 3
Distributions of Parent Affective Style Behavior by Child Diagnostic Groups

Parents' AS Profiles	Child Diagnostic Status		
	Depressed $n = 21$	SZ and SPD $n = 18$	Normal $n = 20$
Overall AS			
Low	4 (19%) ^{a,b}	2 (11%) ^b	9 (45%) ^a
High	17 (81%)	16 (89%)	11 (55%)
Harsh Criticism			
Low	11 (52%) ^a	4 (22%) ^b	15 (75%) ^a
High	10 (48%)	14 (78)	5 (25%)

Note: Frequencies sharing the same superscripts do not differ significantly.

The conventional cut-off seems low for the current sample, since it classifies 75% of the overall sample as high AS. It is possible that the use of parental intrusion and guilt induction as indices of negative affect for this age group may be somewhat inappropriate due to specific parenting demands of children in comparison to adult offspring. Thus, a second parental profile classification was created based solely on the presence or absence of at least one harsh critical comment (see Table 3). This classification distinguishes highly between the diagnostic groups and provides a more even distribution, placing 51% of the overall sample as low and 49% as high in harsh criticism, $\chi^2(2, 59) = 10.59, p < .01$. Analyses using this categorization revealed that parents of children with schizophrenia-spectrum disorders were more harshly critical than parents of normal children, $\chi^2(1, 38) = 10.56, p < .01$, and tended to be more harshly critical than parents of depressed children, $\chi^2(1, 39) = 3.72, p < .06$. There was no significant difference between the classification of parents of the

depressed and normal children, $\chi^2(1, 41) = 2.26, p > .10$.

Association between child and parent interaction styles: A final aim of this study was to examine the relationship between children's and parents' interaction style. Investigation of the means of the CS and AS dimensions revealed several interesting correlations. Children's and mothers' use of benign criticism was associated, $r = .28, p < .05, N = 59$, and there was a marginally significant link between their use of guilt induction, $r = .25, p < .06, N = 59$. Children's use of harsh criticism was associated with fathers' intrusive comments, $r = .38, p < .05, N = 30$, while children's self-denigration was linked to benign paternal criticism, $r = .41, p < .05, N = 30$. However, there were no significant associations between children's CS profiles and parents' AS profiles, either for the sample as a whole or within separate diagnostic groups.

DISCUSSION

Data from the current study suggest that the interaction patterns in families of psychiatrically disturbed children differ from those in families of children with no psychiatric disorder. Specifically, when compared to community controls, children with depressive disorders were more likely to make statements characterized by guilt induction and harsh criticism, while the parents of depressed children and those of normal controls showed similar affective transactional behavior. Alternatively, whereas no differences were found in the communication styles of children with schizophrenia-spectrum disorders (schizophrenia, SZ, and schizotypal personality disorder, SPD) and normal controls, parents of children with SZ and SPD disorders were more likely to make harsh critical comments than were parents of normal controls. These results are consistent with the position that child psychiatric disorder is generally associated with distress and friction within the family. It is important to note, however, that these cross-sectional data do not address the question of whether adverse family interaction patterns predate the onset of child psychiatric disorder or represent associated characteristics or consequences of disorder.

Current findings also indicate some specificity in the interactional patterns associated with different psychiatric disorders. The most robust differences were found between the communication behaviors of depressed children and those of the normal controls, congruent with the observation that mood disorders are related to difficulties regulating affective and emotional behavior (for review, see McCauley & Myers, 1992). In contrast, it was parental transactions that differentiated the families of children with schizophrenia-spectrum disorders and families of the normal controls. These results are also consistent with our prior findings using a related sample, which indicated that depressed children tend to produce high levels of globally negative behavior during family interactions (Cook et al., 1990). Alternatively, in a related sample, children with schizophrenia-spectrum disorders showed especially marked problems with thought disorder in comparison to normal peers, while mothers of children with schizophrenia-spectrum disorders also displayed more thought disorder and difficulties with communication clarity relative to mothers of normal controls (Tompson, Asarnow, Hamilton, et al., 1997). This pattern of data suggests that communication deficits of depressed children may be primarily related to affective expression as observed in the family context, while those of SZ and SPD children are more strongly linked to thought disturbance within the family domain.

The specific association between depression and the child's use of guilt induction is of particular interest in relation to findings that depressed mothers report more use of guilt induction techniques with their children than normal mothers (Susman, Trickett, Iannotti, et al., 1985). It has also been noted that children of depressed mothers show themes of guilt expression that are more deviant, distorted, and unresolved than those of children of normal control mothers (Zahn-Waxler, Kochanska, Krupnick, & McKnew, 1990). In conjunction, these findings suggest that the use of guilt induction in family interactions may be a salient feature that distinguishes childhood depression. Some examples of children's use of guilt induction in the current sample are: "You always leave me alone, and that makes me feel bad," and "You don't really love me."

Although no link was found between child and parent interaction style using profile measures of CS and AS, investigation of correlations of variable means revealed a positive relationship between children's and mothers' use of benign criticism, while a marginally significant link was found between children's and mothers' guilt induction. Further, children's use of harsh criticism was associated with fathers' intrusion, while children's self-denigration was related to benign paternal criticism. Although these data suggest differential communication behavior dependent upon which parent is interacting with the child, conclusions are limited since half the children in the sample were from single-mother homes. However, current results are supportive of the position that child and parent exert reciprocal influences within the transactional context.

A potential difficulty in elucidating the relationship between diagnostic status and interactional patterns is that acuteness of symptomatology may exert an effect on family communication styles beyond that related to psychiatric diagnosis per se. To address this issue in part, children in the present study were characterized as having an acute illness onset if a notable decline in functioning occurred during the one year immediately prior to the index hospitalization, while a nonacute categorization was assigned if a more gradual pattern of decline in functioning was noted. Overall, only 4 (10%) of the psychiatric sample had an acute onset, and these 4 cases are all within the depressed group. The remaining 35 (90%) of the

sample had a nonacute onset, including all of the children with schizophrenia-spectrum disorders. Although onset patterns are obviously confounded with diagnosis, given this distribution and the limited sample size, it is of note that none of the parents of the children with acute illness onset were classified as having highly critical profiles. An abrupt shift from premorbid functioning may be more easily interpreted by the parents as indicative of illness-related factors beyond the child's control, and as such, be associated with less criticism of the child, as predicted by Hooley's attributional model (1987).

The interplay between direct interactional family behaviors and family attitudes merits additional attention. In the present study, an investigation of the relationship between transactional patterns, as indexed by coping style and affective style dimensions, and family attitudes, as indexed by expressed emotion (EE), was problematic due to variations in the timing of data collection of these measures, as well as to potential confounds of EE with diagnostic status, since high EE occurred primarily within the depressed group (Asarnow, Tompson, Hamilton, et al., 1994). However, exploratory analysis suggests that interpersonal communication styles in the current sample are relatively independent of negative parental attitudes, $p > .05$.

While the current study provides a significant contribution in a number of ways, results should be interpreted while considering the following cautions. First, for the purposes of the current study, children with schizophrenia and schizotypal personality disorder were examined together, as previous research supports the view that both fall within the schizophrenia spectrum (Caplan, Guthrie, Fish, et al., 1989). Children with major depression and dysthymia were also grouped together, as associations between the disorders have been demonstrated (Asarnow & Carlson, 1985; Kazdin, Colbus, & Rodgers, 1986; Kovacs, Feinberg, Crouse-Novak, et al., 1984). Although preliminary analyses in the current study indicated similarities between interaction styles of families of children with SZ and those with SPD and also between families of children with major depression and dysthymia, future research is needed to confirm these diagnostic associations. Second, measurement of nonverbal affective behavior may have provided a finer and more subtle distinction of the quality of the parent/child relationship. It can, however, be assumed that verbal content captures more obvious aspects of interaction style and, as such, the present data may represent a fairly conservative estimate of the affective tone of the interaction. Third, the conflict task used in the family interaction may obscure positive transactional dimensions, since the problem-solving protocol is specifically designed to generate affectively charged discussions. A broader spectrum of interactive responses might be expected in future studies that examine an emotionally neutral task, such as solving a maze, or, alternatively, an explicitly positive task designed to pull for emotionally warm responses, for example: "Discuss two of your happiest memories together." Finally, present findings are cross-sectional in nature, and do not address the body of research that exists concerning the predictive role of negative affective style for both schizophrenia-spectrum disorders and the affective disorders.

The current study helps to elucidate family dynamics within the context of severe child psychopathology. Childhood onset depressive disorders and schizophrenia-spectrum disorders are relatively rare. While many previous studies have included more mildly disturbed community samples of children who are somewhat elevated on self-report inventories, children in the present sample meet definite clinical classification. Another important feature of this study is the inclusion of a community control group that allows for the examination of the specificity of childhood schizophrenia-spectrum disorders and depressive disorders to family attitudes and interaction styles. The study of psychopathology can most meaningfully be understood within the context of normal development since this provides a framework for more thorough interpretation of factors related to the presentation of psychiatric disorder.

In conclusion, results from this study suggest that child diagnostic status is related to both child and parental interactive behavior. Current findings indicate that guilt induction from the child and harsh criticism from the parent are two powerful components that characterize dysfunctional interactions at this developmental stage. It is also possible that the guilt-inducing styles of depressed children may contribute to a suppression of critical parent behavior within the interaction. This notion is consistent with previous results from this project indicating that mothers of children with depressive disorders were significantly less likely to respond to negative child behavior with reciprocal negative responses, when compared to mothers of children with schizophrenia-spectrum disorders (Cook et al., 1990). These interactional data, in conjunction with our data indicating more critical parental attitudes toward the child among parents of depressed children, when compared to parents of SZ and SPD children, underscore the possibility that the negative interactional styles of depressed children may serve to increase the likelihood that parents will inhibit critical behavior, perhaps in the hopes of minimizing the risk of negatively escalating behavior from the child. Finally, the current study suggests that intervention at the family system level may be particularly helpful for families of psychiatrically disordered children.

REFERENCES

1. Armsden, G. C., McCauley, E., Greenberg, M. T., Burke, P. M. and Mitchell, J. R., (1990) Parent and peer attachment in early adolescent depression. *Journal of Abnormal Child Psychology*, 18, 638-697..

2. Asarnow, J. R., (1981) *Modified Camberwell Family Interview for Children*. Unpublished manuscript, UCLA School of Medicine, Los Angeles CA.
3. Asarnow, J. R. and Carlson, G. A., (1985) The Depression Self-Rating Scale: Utility with child psychiatric inpatients. *Journal of Consulting and Clinical Psychology*, 54, 491-499.
4. Asarnow, J. R., Goldstein, M. J., Tompson, M. and Guthrie, D., (1993) One-year outcomes of depressive disorders in child psychiatric in-patients: Evaluation of the prognostic power of a brief measure of expressed emotion. *Journal of Child Psychology and Psychiatry*, 34, 129-137.
5. Asarnow, J. R., Tompson, M. C., Hamilton, E. B., Goldstein, M. J. and Guthrie, D., (1994) Family expressed emotion, childhood-onset depression, and childhood-onset schizophrenia spectrum disorders: Is expressed emotion a nonspecific correlate of child psychopathology or a specific risk factor for depression?, *Journal of Abnormal Child Psychology*, 22, 129-146.
6. Burbach, D. J., Kashani, J. H. and Rosenberg, T. K., (1989) Parental bonding and depressive disorders in adolescents. *Journal of Child Psychology and Psychiatry*, 30, 417-429.
7. Caplan, R., Guthrie, D., Fish, B., Tanguay, P. E. and David-Lando, G., (1989) The Kiddie Formal Thought Disorder Rating Scale: Clinical assessment, reliability, and validity. *Journal of the American Academy of Child and Adolescent Psychiatry*, 28, 408-416.
8. Cole, D. A. and Rehm, L. P., (1986) Family interaction patterns and childhood depression. *Journal of Abnormal Child Psychology*, 14, 297-314.
9. Cook, W. L., Asarnow, J. R., Goldstein, M. J., Marshall, V. G. and Weber, E., (1990) Mother-child dynamics in early-onset depression and childhood schizophrenia spectrum disorders. *Development and Psychopathology*, 2, 71-84.
10. Doane, J. A., Falloon, I. R.H., Goldstein, M. J. and Mintz, J., (1985) Parental affective style and the treatment of schizophrenia. *Archives of General Psychiatry*, 42, 34-42.
11. Doane, J. A. and Lewis, J. M., (1984) Measurement strategies in family interaction research: A profile approach (pp. 93-101). In N.F. Watt, E.J. Anthony, L.C. Wynne, & J.E. Rolf (eds.), *Children at risk for schizophrenia: A longitudinal perspective*. New York: Cambridge University Press.
12. Doane, J. A., West, K. L., Goldstein, M. J., Rodnick, E. H. and Jones, J. E., (1981) Parental communication deviance and affective style: Predictors of subsequent schizophrenia spectrum disorders in vulnerable adolescents. *Archives of General Psychiatry*, 38, 679-685.
13. Garber, J., Quiggle, N. and Schlundt, D., (1991) Family functioning and interactions among depressed mothers and their children. Paper presented at the Society for Research in Child Development meetings, Seattle WA.
14. Goldstein, M. J., Miklowitz, D. J., Strachan, A. M., Doane, J. A., Nuechterlein, K. H. and Feingold, D., (1989) Patterns of expressed emotion and patient coping styles that characterize the families of recent onset schizophrenics. *British Journal of Psychiatry*, 155, 107-111.
15. Hamilton, E. B., Hammen, C. L., Minasian, G. and Jones, M., (1993) Communication styles of children of mothers with affective disorders, chronic medical illness, and normal controls: A contextual perspective. *Journal of Abnormal Child Psychology*, 21, 51-63.
16. Hollingshead, A. B., (1975) *Four-factor index of social status*. New Haven CT: Yale University, Department of Sociology.
17. Hooley, J. M., (1986) Expressed emotion and depression: Interactions between patients and high versus low EE spouses. *Journal of Abnormal Psychology*, 95, 237-246.
18. Hooley, J. M., (1987) The nature and origins of expressed emotion (pp. 176-194). In K. Hahlweg & M.J. Goldstein (eds.), *Understanding major mental disorder: The contribution of family interaction research*. New York: Family Process Press.
19. Kazdin, A. E., Colbus, D. and Rodgers, A., (1986) Assessment of depression and diagnosis of depressive disorder among psychiatrically disturbed children. *Journal of Abnormal Child Psychology*, 14, 499-516.
20. Kovacs, M., Feinberg, T. L., Crouse-Novak, M., Paulauskas, S. L., Pollack, M. and Finkelstein, R., (1984) Depressive disorders in childhood. *Archives of General Psychiatry*, 41, 643-649.
21. McCauley, E., Mitchell, J. R., Burke, P. and Moss, S., (1988) Cognitive attributes of depression in children and adolescents. *Journal of Consulting and Clinical Psychology*, 6, 903-908.
22. McCauley, E. and Myers, K., (1992) Family interactions in mood-disordered youth. *Child and Adolescent Psychiatric Clinics of North America*, 1, 111-128.
23. Miklowitz, D. J., Goldstein, M. J., Nuechterlein, K. H., Snyder, K. S. and Doane, J. A., (1987) The family and the course of recent-onset mania (pp. 195-211). In K. Hahlweg & M.J. Goldstein (eds.), *Understanding major mental disorder: The contribution of family interaction research*. New York: Family Process Press.
24. Miklowitz, D. J., Goldstein, M. J., Nuechterlein, K. H., Snyder, K. S. and Mintz, J., (1988) Family factors and the course of bipolar affective disorder. *Archives of General Psychiatry*, 45, 225-231.
25. Puig-Antich, J., Orvaschel, H., Tabrizi, M. and Chambers, W. J., (1983) *Schedule for Affective Disorders and*

Schizophrenia for School-Age Children, Epidemiological Version. Unpublished manuscript, New York State Psychiatric Institute, Department of Child and Adolescent Psychiatry.

26. Stark, K. D., Humphrey, L. L., Crook, K. and Lewis, K., (1990) Perceived family environment of depressed and anxious children: child's and maternal figure's perspectives. *Journal of Abnormal Child Psychology*, 18, 527-547.
27. Strachan, A. M., Feingold, D., Miklowitz, D. J. and Nuechterlein, K. H., (1989) Is expressed emotion an index of a transactional process? II. Patient's coping style. *Family Process*, 28, 169-181.
28. Strachan, A. M., Feingold, D., Zaden, S. and Valone, K., (1989) *Patient coping style: A coding manual for patients' interactional behavior*. Unpublished manuscript, Department of Psychology, University of California, Los Angeles.
29. Strachan, A. M., Leff, J. P., Goldstein, M. J., Doane, J. A. and Burt, C., (1986) Emotional attitudes and direct communication in the families of schizophrenics: A cross-national replication. *British Journal of Psychiatry*, 149, 279-287.
30. Susman, E. J., Trickett, P. K., Iannotti, R. J., Hollenbeck, B. E. and Zahn-Waxler, C., (1985) Child-rearing patterns in depressed, abusive, and normal mothers. *American Journal of Orthopsychiatry*, 55, 237-251.
31. Tompson, M. C., Asarnow, J. R., Hamilton, E. B., Newell, L. E. and Goldstein, M. J., (1997) Children with schizophrenia spectrum disorders: Thought disorder and communication problems in a family interactional context. *Journal of Child Psychology and Psychiatry*, 38, 421-429.
32. Zahn-Waxler, C., Kochanska, G., Krupnick, J. and McKnew, D., (1990) Patterns of guilt in children of depressed and well mothers. *Developmental Psychology*, 26(1), 51-59.

¹Since diagnoses of schizophrenia (SZ) and schizotypal personality disorder (SPD) are more restrictive in DSM-IV compared to DSM-III, it is likely that some of the schizophrenia and schizotypal personality disorder cases in the current study would not meet DSM-IV criteria, but would still be considered as falling within the schizophrenia spectrum. Similarly, some of the DSM-III dysthymic disordered cases would possibly fall in a subsyndromal depression group according to DSM-IV.

²For comparison purposes with earlier work, maternal interactional behavior alone for all subjects was also examined in relationship to both child diagnostic status and child coping style. It should be noted, these results parallel those that reported using both mother and father profiles within the dual-parent families.