Published in final edited form as:

Fam Relat. 2010 July 1; 59(3): 313–325. doi:10.1111/j.1741-3729.2010.00604.x.

From Early Childhood to Adolescence: Linking Family Functioning and School Behavior

Vanessa K. Johnson

West Chester University

Abstract

The present study uses observational assessment of 66 two-parent families working and playing together when their eldest child is in kindergarten and again in 9th grade to identify distinct patterns of family functioning derived from structural family systems theory. Whereas concurrent assessment of the relationship between family type and adolescents' school behavior were not significant, significant prospective longitudinal relationships between family type assessed in early childhood and 9th grade school behavior were indicated. Kindergarteners whose families were primarily characterized by a strong mother-child alliance were less academically competent, more aggressive/inattentive, and more anxious/depressed/withdrawn at school nine years later when they were in 9th grade, than their peers in more cohesive or father-child allied families.

Keywords

Developmental psychopathology; Early childhood; family interaction; Adolescence; Adolescents and Families

The present study investigated how triadic-level observations of family functioning change from early childhood to adolescence and how family functioning at each of these time points is linked to ninth graders' school adjustment. Previous research investigating linkages between whole family functioning (interaction among mothers, fathers, and children) and children's behavior finds adolescents' perceptions of family cohesion to be correlated with depression (Unger, Brown, Tressell, & Ellis McLeod, 2000) and academic achievement (Unger, Ellis McLeod, Brown, & Tressell, 2000). The vast majority of studies linking family functioning and adolescent functioning, however, are limited in three important ways. First, family research seldom includes triadic-level observation of family functioning (Wagner & Reiss, 1995), relying instead on self-report or observation of family dyads as a means of assessing family functioning (McHale & Cowan, 1996). Second, a significant gap exists between clinical family psychology and family research in the way family functioning is labeled and assessed. Clinical family psychologists often use family typologies to identify theoretically meaningful differences among families (Olson et al., 1983). Few studies in the family research literature, however, use typologies to differentiate families, instead assessing family functioning across a series of individual dimensions such as expressiveness or adaptation. Third, family research rarely examines observed family functioning over time. The result is that we have little systematic data to document the way family functioning shifts across development. The present study adds to the existing family research literature by investigating how triadic-level observations of family typologies change from early

childhood to adolescence, and by investigating how family functioning at each of these time points is linked to 9th graders' behavior at school.

Triadic-Level Family Functioning

Although many differences exist among family systems theories, one common thread is that observation or assessment of various family subsystems (i.e., parts of the family system such as the dyadic mother-child relationship) is not the same as observing or assessing the family system when the whole family is together (e.g., McHale & Fivaz-Depeursinge, 1999; Minuchin, 1974). Despite empirical support for clinical family systems theories advocating that assessment of the entire family system (e.g., mother, father, child) is different from, and as important as, assessment of the various parts of a family (e.g., dyadic family subsystems; see Johnson, Cowan, & Cowan, 1999), the majority of family research continues to rely almost exclusively on either the assessment of marital and parent-child dyadic relationships (i.e., mother-father, mother-child, and father-child dyads) or self-report as a method of evaluating family functioning.

In an effort to move beyond the dyad and toward a better understanding of the complexities involved in whole-family interaction, the present study assesses family triads (mother-father-child). Although triadic interactions may still represent a family subsystem within the larger whole-family context, observational assessment of family triads differ significantly in the quality and quantity of the interaction from observational assessments of dyadic family relationships (Buhrmester, Camparo, Christensen, A., & Hinshaw, 1992; Gjerde, 1986; Johnson et al., 1999; McHale & Fivaz-Depeursinge, 1999). For example, mothers and fathers tend to hold, rock, touch, and talk to their infants less during triadic family interaction than during dyadic parent-infant interaction (Belsky, 1979; Lamb, 1976; Pedersen, Anderson, & Cain, 1980). The quality of parents' engagement behavior also differs depending on whether mothers and fathers are interacting with their child alone or together (Buhrmester et al.; Gjerde; Johnson, 2001). These findings indicate that the second parent's presence alters the context of the first parent's interaction with his/her child, transforming the parent-child dyad into an intricate and complex triadic family system comprised of both marital and parent-child subsystems (McHale & Fivaz-Depeursinge). Furthermore, over and above the effects of dyadic level assessments of parenting and marital dyads, triadic-level assessment of family functioning makes a significant unique contribution to explaining variability in children's adjustment (Deal, Hagan, Bass, Hetherington, & Clingempeel, 1999; Johnson et al., 1999; McHale, Johnson, & Sinclair, 1999). Given evidence suggesting significant differences between dyadic- and triadic-level assessment of family functioning coupled with the relative dearth of literature on triadic family observations, observations of triadic family interactions are a first step in moving beyond the family dyad and toward a better understanding of whole-family interactions.

Self-report measures provide assessment of an individual family members' perspective of his/her whole family (i.e., insider assessment); however, clinical family systems theories also advocate for the use of direct observation of the family system as a means of obtaining an outsider's assessment of the family (Minuchin, 1974; Olson & Gorall, 2003). Self-report and observational assessments of family functioning offer distinct perspectives on the family; there is little correlation between self-report and observational perceptions of family interaction (Noller & Callan, 1988). Whereas self-report offer researchers a window into the meaning family relationships may have for individuals within the family, outsiders' observational assessments offer a relatively objective understanding of family interaction devoid of other psychological meaning and material that may interact with insider reports of family behavior. Examining linkages between outsider observations of family functioning and children's behavior may assist in teasing apart the ways in which family relationships

influence adjustment. Is the driving force linking family functioning to children's adjustment the meaning that is made from family relationships or the actual interaction? Therefore it is important that we ascertain whether outsider assessment of family functioning can also be used to identify clinically useful family types.

Family Functioning and Family Types

In practice, clinicians need a theoretically grounded and empirically validated taxonomy to aid in characterizing a multitude of observations about family functioning succinctly. Such a system aids in communication among clinicians, precision among researchers, and the application of research to clinical practice (Hinshaw, Lahey, & Hart, 1993). Structural family systems theory (Minuchin, 1974) offers a theoretically based nosology of family types that is often used in clinical contexts but is less often validated in research contexts. Much of the research on family functioning relies on investigating dimensions of family functioning, such as cohesion, adaptability, or warmth, and not characterizing the family based on how multiple dimensions of family functioning combine. Family typologies offer a practical advantage to clinicians, in that they may be easier to identify in clinical practice than considering multiple dimensions of family factors simultaneously.

Minuchin (1974) argued that it is clinically useful to combine one's observations about the boundaries and relatedness of a family system to understand the overall pattern of family functioning or family type. In so doing, Minuchin identified 4 patterns of family functioning or family types that are theoretically unique: the cohesive family, the separate family, the detouring family, and the triangulating family. In *cohesive families*, family members appear connected to one another so that the family appears to be a distinguishable unit, yet each family member also maintains some degree of individuality. Family members in *separate families* appear disconnected to one another, they have a loose identity as a family unit, sacrificing family connectedness for individuality among family members. In *detouring families*, the adult parents in the family appear to maintain a close sense of connection by transferring their relational distress and anxiety onto their child. The result is asymmetry among family relationships with the mother-father relationship appearing close and each parent-child relationship appearing more distant. The *triangulated family* is also asymmetrical. In this type of family, however, it is the mother-father relationship that is distant and at least one parent-child relationship is allied or close. The most distinctive characteristic of the triangulating family is that the child is coerced into the center of marital conflict.

Observational tools assessing family functioning such as the Clinical Rating Scale (CRS; Olson & Gorall, 2003) are often used to identify family types in clinical contexts but less often used in research contexts. The present study advances research on family types by using an observational research approach informed by Minuchin's (1974) conceptualization of family types outside the clinical context. By observing triadic-level family interaction, families were identified that share a common pattern of functioning (i.e., cohesive, separate, detouring, or triangulated family pattern) across multiple dimensions of family organization.

Changes in Family Type over Time

Whereas developmental theory clearly articulates developmental changes in children from early childhood to adolescence, family systems theory does not fully articulate whether similar developmental changes occur in family functioning. Families are expected to adapt to normative developmental changes within the family system (e.g., aging and maturation), but the nature and degree of adaptation is not clearly defined or empirically validated. Family research, however, does indicate that power and cohesion within dyadic family relationships shift during adolescence (Feldman & Gehringer, 1988). In particular,

adolescents' perceptions of family cohesion decrease across the adolescent years (Feldman & Gehringer, 1988). Furthermore, as peer influence increases, family relationships are thought to influence children's behavior less during adolescence than during earlier developmental periods (see Collins & Roisman, 2006). Given that particular aspects of family functioning that are central to Minuchin's (1974) understanding of family structure, such as family cohesion, shift across adolescence (Feldman & Gehringer), might different family typologies be apparent during adolescence than those observed during early childhood?

Using triadic-level observation of family functioning, previous research identified three distinct family types at two different time points: kindergarten and 4th grade (Johnson, 2003). The types of families identified, however, differed slightly when assessed during early childhood or middle childhood (Johnson, 2003). The first aim of the present study, therefore, was to explore whether or not patterns of family organization and functioning are stable from early childhood to adolescence, and if not, to document the ways in which family functioning shift over time.

Linking Family Type to Children's Adjustment

The second aim of this study was to use a longitudinal approach to examine prospective and concurrent linkages between family types and adolescents' adjustment. Findings using self-report measures to identify family types have found children from more cohesive or balanced families to exhibit fewer externalizing behavior problems (under controlled or under regulated types of behavior such as aggression and inattention) at home (Kerig, 1995), and to also exhibit fewer internalizing behaviors (over controlled or over regulated types of behavior, such as anxiety or depression; Olson & Gorall, 2003) compared to children in separate or unbalanced families.

Family-school linkages are a particularly important area of study given that inequalities stemming from home, neighborhood, and peer groups account for much more of the variance in children's academic achievement than variations in school environments (Cowan, Cowan, Ablow, Johnson, & Measelle, 2005; Olson, Bates, & Kaskie, 1992). One of the few observational studies of family type to examine links between family functioning and children's school behavior reports that teachers saw fourth graders in families with strong father-child subsystems as more aggressive at school than their peers in cohesive and separate families (Johnson, 2003). Moreover, the longitudinal pattern of family functioning from early childhood to middle childhood also appears important in predicting children's school adjustment. Children from families that were observed to be non-cohesive during the early childhood and middle childhood years had significant difficulty with externalizing behaviors during middle childhood (Johnson, 2003). Given that family functioning is thought to be less influential during adolescence than during early childhood when peer influence is a less powerful predictor of child behavior (Collins & Roisman, 2006), it was particularly interesting to assess whether observations of family types during early childhood predicted adolescents' school behavior nine years later. The present study adds to the existing family research literature by investigating how change in family type from early childhood to adolescence will predict 9th grade teacher ratings of adolescent adjustment. Specifically, it was hypothesized that adolescents from families seen as non-cohesive at both the kindergarten and 9th grade family assessment sessions will show difficulty with their academic competence, externalizing behavior, and internalizing behavior in their 9th grade school setting.

Method

Participants

Sixty-eight two-parent families and their eldest child (40 boys, 28 girls) participated in the present study when their children were in kindergarten and again when their children were in 9th grade. In an effort to keep comparisons of family interaction consistent across time points, only two-parent families were included in this study; families with significant change in family structure resulting in only one parent being present for the family interaction session were omitted from the present study. Nine couples included in the present study divorced between the time their oldest child was in kindergarten and ninth grade. There were no significant differences in the number of families who later divorced that were seen as cohesive ($n = 4$) or not cohesive ($n = 5$) during the kindergarten family interaction. Incomplete data from the various family assessment points (23 families) and from children's teachers (9 families) reduced the sample for repeated measures and multimethod analyses resulting in complete data for 36 families. T-tests and Mann Whitney U were used to assess for significant differences in demographics, gender, and family size among study participants. No significant mean differences in demographics or family interaction were found between the remaining families and those with missing data. No significant gender differences were found for any of the family interaction variables or for any of the child behavior variables at any time point. Similarly, no significant differences in any of the family interaction variables were found for families with or without additional children (i.e., siblings to the target child in the study).

Families were recruited as part of the Schoolchildren and their Families (SAF) project. The SAF project is a longitudinal study co-directed by Philip Cowan and Carolyn Pape Cowan to investigate the effect of individual, marital, and family functioning on children's transition to elementary school (Cowan, Cowan, Ablow, Johnson, & Measelle, 2005). Families ($n = 100$) began their participation in the project in the year before their eldest child entered kindergarten and were followed for 9 years, until the child had completed ninth grade. The longitudinal nature of the SAF project and its multidomain focus (i.e., families and children's classroom behavior) provide an excellent opportunity to investigate linkages between family functioning children's school behavior over time.

Two-parent families from within a 40-mile radius of the University (omit) and whose first child was entering kindergarten were targeted by the SAF project using public service radio announcements and flyers to nursery schools and day-care centers. Sixteen percent of the parent participants self-identified as African American (6.6%), Latino American (2.5%), or Asian American (6.9%), and 84% of the parent participants self-identified as Caucasian. On entering the project, the average age of fathers was 37.07 ($SD = 7.44$) and the average age of mothers was 36.18 ($SD = 5.75$). Families reported total family incomes ranging from \$22,000 to \$240,000, with median family income of \$73,000. Median income for the (omit) Area at the time of the study was \$32,000, a figure that included single-parent families.

As part of the SAF project, a randomly selected 52% of the study couples participated in a 16-week "couples group" intervention before their eldest child entered kindergarten (see Cowan et al., 2005). An additional 22% were offered one brief consultation intervention each year. The remaining 26% were offered the couples group intervention but declined. No significant pre-intervention differences were found among the groups in measures of parents' marital satisfaction, depression, or parental stress. Because significant intervention effects were found for parenting behavior and children's school behavior (see Cowan et al., 2005), intervention condition was used as a covariate for all analyses included in this study.

Family assessments occurred at five time points: (a) the year prior to kindergarten (preschool year), (b) the kindergarten year, (c) the first-grade year, (d) the fourth-grade year, and (e) the ninth-grade year. Differences in family functioning may be accentuated during times of stress and transition (Hinde & Stevenson-Hinde, 1988). Earlier findings identify the transition to kindergarten (Cowan et al., 2005) and the transition to adolescence (Hinde & Stevenson-Hinde) as times of normative family transition; most families mark these time points as transitions that potentially disrupt family equilibrium but that are typical in Western culture (see Cowan et al.). The preschool, first grade, and fourth grade time points are not times of normative transition for families, potentially resulting in fewer observable differences in functioning among families. Furthermore, since the aim in this analysis was to examine the relationship between change in family behavior from early childhood to adolescence, only family data from the second and fifth time-points during the children's kindergarten year (mean age 66 month) and during the children's 9th grade year (mean age 174 months) were used. Measures of children's classroom behavior were obtained from 9th grade teachers.

Procedure

The SAF project involved laboratory assessment of the child and family at five time points from children's preschool year through 9th grade. The present study reports on secondary analyses that pull from only two data assessment points that best correspond with the research questions studied: the kindergarten family interaction session when children were in early childhood and the ninth-grade family interaction session when children were adolescents. During their children's kindergarten and 9th grade years, families participated in a visit to a laboratory playroom during which they were observed and videotaped working and playing on both structured and unstructured tasks. At these times, family participants were told in general terms that the project staff wanted to watch how family members worked and played together. Study participants were blind to the specific type of observations being made and to specific study hypotheses. For the purpose of this study, family data was drawn from observational coding of 20-minute family interaction sessions (kindergarten and adolescent assessments) during which the entire family (mother, father, child, and siblings, if applicable) was instructed to work together to complete a difficult task. During the kindergarten interaction families were instructed to replicate a complicated puzzle with polygon shapes using a completed model of the puzzle as a guide. During the 9th grade family assessment visit, family members worked together to complete a questionnaire requiring the family to draw a diagram of how close each family member was to another.

Children's behavior in school was assessed from teacher reports of children's adjustment during grade 9. The children attended school in many different communities in the (omit) Area. Each target child's English and Math or Science teacher was contacted by letter and telephone and asked to complete a behavioral checklist assessment of the participant child in his/her classroom. One hundred and eight teachers participated in this study.

Measures

Family functioning—The Family Structure and Process coding system (FSAP, Teichman, Cowan, & Cowan, 1988) was used to assess functioning in the whole family. Trained observers rated 4 items: family level cohesion, strength of the marital subsystem (mother-father), and strength of both of the parent-child subsystems. Because not all the families observed had a sibling to the target child in the study, the family subsystems involving a sibling were not scored separately. Sibling dynamics were, however, taken into account when assessing family level cohesion. These items were chosen based on the prediction that they would combine to depict the 4 family types described by Minuchin (1974): cohesive families, separate families, detouring families, and triangulating families. Minuchin argued

that family types can be identified through attention to the organization or structure of the family. Family cohesion, and the relative strength of each of the family dyads are constructs that Minuchin identifies as important in measuring boundaries and structural relationships within the family. High ratings on the family level cohesion variable were given to families that were observed to be emotionally connected to one another and interested in each other, but not at the expense of one's sense of autonomy or to the detriment of dyadic family relationships. Ratings on the family subsystem variables (i.e., strength of the mother-father, mother-child, and father-child subsystems) were given to family dyads based on observations of the quality and quantity of verbalizations, expression of positive and negative affect, interest level, and general amount of interaction between two family members (see Johnson, 1999).

Coders rated each item (family level cohesion, strength of the mother-father subsystem, strength of the parent-child subsystems) on a 5-point scale (1 = very low; 5 = very high). Separate teams of coders rated family functioning when children were in kindergarten and when children were in 9th grade. All family interaction coding teams were trained by the same 'expert' and were assessed as being reliable with the expert before coding the family interaction data from that time point. Interrater reliability for each family interaction item was assessed using Pearson correlation and Cohen's Kappa to compare the ratings made of a random subsample of 15 of the families at the kindergarten time point ($r = 0.66$, kappa = .61 Family Cohesion; $r = 0.87$, kappa = .79 Strength of Martial Subsystem; $r = 0.64$, kappa = .71 Strength of Parent-Child Subsystems) and the 9th grade time point ($r = 0.85$, kappa = .79 Family Cohesion; $r = 0.92$, kappa = .86 Strength of Martial Subsystem; $r = 0.84$, kappa = .67 Strength of Parent-Child Subsystems).

Based on Minuchin's (1974) descriptions of family types, it was predicted that cohesive families would receive high ratings on each of the 4 family interaction variables used in the present study (i.e., high ratings for family level cohesion and high ratings for strength of each family subsystem). In contrast, it was predicted that low scores on all of the 4 study variables would indicate a separate family (i.e., low ratings for family level cohesion and low ratings for strength of each family subsystem). Triangulated families were predicted to be families receiving high ratings for the strength of either the mother-child subsystem or the father-child subsystem and low scores on the remaining family subsystem measures (i.e., mother-father subsystem and other parent-child subsystem) and family level cohesion. Detouring families were predicted to be rated by observers as having a strong mother-father subsystem, but rated low on the remaining 3 study variables (i.e., strength of the parent-child subsystems and family level cohesion).

Children's behavior in school—Measures of children's behavior in school were obtained through teachers' ratings on the Child Adaptive Behavior Inventory (CABI; see Cowan et al., 2005). The CABI contains 109 items assessing children's academic and social competence, problematic social behaviors, and teacher's view of whether the child is accepted or rejected by peers. Ratings are made by teachers on a 4-point scale from *not at all like child* to *very much like child*. Each child's English and Math or Science teacher completed the checklist for the participant in his/her classroom. Teacher ratings were averaged to compute an overall score on each scale for each participant.

Previous use of the CABI established 6 outcome factors (see Cowan et al., 2005). The present study focused on the following 5 factors: academic competence, externalizing – aggressive, externalizing – hyperactive, internalizing – social isolation, and internalizing – anxious and depressed. As in previous studies, the two externalizing factors were highly correlated ($r = 0.71$). These factors, therefore, were averaged to create one composite variable assessing children's externalizing behavior. Similarly, the two internalizing factors

were significantly correlated ($r = 0.68$) and therefore also averaged, creating one composite variable assessing children's internalizing behavior.

Results

In order to test for consistency in the use of the FSAP rating scale across assessment points, MANCOVA controlling for treatment condition was used to examine mean differences in ratings of family functioning obtained during the kindergarten and 9th grade whole family interaction sessions. The multivariate test for family interaction session (kindergarten vs. grade 9) was not significant, indicating no significant differences in kindergarten and 9th grade assessments of family level cohesion ($M = 3.07$, $SD = 0.57$, kindergarten; $M = 3.24$, $SD = 0.86$, 9th grade), strength of the marital subsystem ($M = 2.57$, $SD = 0.60$, kindergarten; $M = 3.29$, $SD = 0.62$, 9th grade), strength of the father-child subsystem ($M = 2.89$, $SD = 0.69$, kindergarten; $M = 2.95$, $SD = .081$, 9th grade), or strength of the mother-child subsystem ($M = 3.20$, $SD = 0.46$, kindergarten; $M = 3.21$, $SD = 0.89$, 9th grade).

Family Types During Adolescence

Cluster analyses were used to identify distinct family types from kindergarten family interaction sessions (see Johnson, 2003). Analyses revealed three clusters of family interaction, or family types: (1) cohesive families, (2) father-child allied families (i.e., strong father-child subsystem and relatively weak mother-child and mother-father subsystems), and (3) mother-child allied families (i.e., strong mother-child subsystem and relatively weak father-child and mother-father subsystems). Whereas the parent-child allied family type shares some characteristics with triangulated families, observations from the present study did not reveal direct evidence that children in parent-child allied families were drawn into the center of marital conflict.

To attempt to identify distinct family types from the 9th grade family interaction sessions, family scores on each FSAP variable were cluster analyzed. The four FSAP variables were first standardized to scale using Z-scores. Hierarchical agglomerate clustering method, in which cluster member's scores on a variable will have greater similarity to the mean score for that variable of its fellow cluster members than for the mean for that variable in any other cluster, was used. Cosine was used as the similarity metric determining cluster membership by detecting pattern differences across variables.

Results indicate a 3-cluster solution during the 9th grade family assessment: a cluster of 36 *cohesive* families receiving high ratings on all 4 of the study variables (i.e. family level cohesion, strength of the marital subsystem, strength of the mother-child subsystem, and strength of the father-child subsystem); a cluster of 24 *separate* families receiving low ratings on all 4 of the FSAP variables was also found; and a third cluster of 8 families comprised a final cluster with a *detouring* family interaction pattern. Detouring families were rated by observers as having a strong marital subsystem but received low ratings on overall family level cohesion and the strength of the parent-child subsystems. No parent-child alliance or triangulated family type was identified from 9th grade data.

MANCOVA controlling for treatment condition was used to test for mean differences between family types for cohesion and strength of each family dyad assessed during the 9th grade time point. The multivariate test for family type was significant ($F(4,63) = 43.13$, $p \leq .001$). There were significant differences between the cohesive, separate, and detouring family types for all 4 of the family interaction variables: family cohesion ($F(2,65) = 63.70$, $p \leq .001$), strength of the marital subsystem ($F(2,65) = 19.10$, $p \leq .001$), strength of the father-child subsystem ($F(2,65) = 27.82$, $p \leq .001$), and strength of the mother-child subsystem ($F(2,65) = 27.65$, $p \leq .001$). Family cohesion was highest among families in the cohesive

family type cluster ($M = 3.92$, $SD = 0.44$), followed by families in the detouring type ($M = 2.88$, $SD = 0.35$), and lowest among families in the separate family type ($M = 2.63$, $SD = 0.49$). Strength of the marital subsystem was highest among detouring families ($M = 4.00$, $SD = 0.00$), followed by cohesive families ($M = 3.56$, $SD = 0.61$), and lowest among separate families ($M = 2.88$, $SD = 0.45$). Strength of the father-child subsystem was highest among cohesive families ($M = 3.47$, $SD = 0.56$), followed by detouring families ($M = 2.50$, $SD = 0.53$), and lowest among separate families ($M = 2.38$, $SD = 0.65$). Strength of the mother-child subsystem was also highest among cohesive families ($M = 3.69$, $SD = 0.62$), followed by separate families ($M = 2.67$, $SD = 0.56$), and lowest among detouring families ($M = 2.50$, $SD = 0.54$).

Consistency in Family Type Across Time

The first aim of the present study was to examine whether family types change from early childhood to adolescence. To facilitate analyses examining relationships between changes in family functioning from early childhood to adolescence in this relatively small sample, families were regrouped as either cohesive or not cohesive (separate or detouring) at each time point. A comparison made of family type during the kindergarten and 9th grade year using chi-square analysis indicated that family type was not distributed by chance across time ($\chi^2 = 3.88$, $p \leq 0.05$). Inspection of the distribution of family types across time indicated significant inconsistency in family type over time. Of the twenty-three families that were seen as cohesive during the kindergarten family assessment, 9 families were seen as cohesive (39%), and 14 families were seen as not cohesive when their child was in 9th grade (61%). Of the thirty-two families seen as not cohesive during the kindergarten family assessment, 21 families were seen as cohesive (66%), and 11 families were seen as not cohesive when their child was in 9th grade (34%).

Family Functioning and Children's Behavior at School

The second aim of the present study was to examine whether family types predicted children's school behavior concurrently in ninth grade, and prospectively linking observations of family types during early childhood with teacher reports of adolescents' 9th grade school behavior. Separate MANCOVA controlling for treatment condition were used to examine concurrent and prospective relationships. Mean differences in 9th grade teachers' ratings of children's behavior for the three family types identified during family interaction sessions with adolescent participants (9th graders) were examined first. Similar analyses were then conducted to examine the relationship between family type at the kindergarten time point and children's 9th grade classroom behavior.

Concurrent comparisons indicated no significant multivariate differences in 9th grade teachers' perceptions of children's behavior for children in any of the 3 identified family types assessed during 9th grade family interaction sessions ($F(4,36) = 0.20$; $p = .93$). Teacher ratings of children's academic competence, externalizing behavior, and internalizing behavior in their ninth grade classrooms were not found to differ significantly for ninth graders in cohesive, separate, and detouring families (see Table 1).

Prospective analyses indicated a significant multivariate effect of kindergarten family type for 9th grade teachers' perceptions of children's behavior at school ($F(4,42) = 4.00$; $p \leq 0.01$). Significant univariate effects of kindergarten family type were indicated for 9th graders' academic competence ($F(2,44) = 7.28$, $p \leq 0.05$), externalizing behavior ($F(2,44) = 4.83$, $p \leq 0.05$), and internalizing behavior ($F(2,44) = 3.52$, $p \leq 0.05$). As indicated by the means listed in Table 1, children in families seen as cohesive during the kindergarten assessment session were seen by their 9th grade teachers as more academically competent and less aggressive/hyperactive than peers in mother-child allied families. Interestingly, 9th

graders in father-child allied families (kindergarten assessment) were seen as more academically competent, less aggressive/hyperactive, and less anxious/withdrawn than peers in mother-child allied families.

A 2×2 MANCOVA controlling for treatment condition was used to test whether changes in family functioning from kindergarten to 9th grade predicted 9th grade teacher ratings of adolescents' school behavior. To conserve power, family types were labeled as cohesive or not cohesive for this analysis. A significant interaction effect of kindergarten and 9th grade family type would support the hypothesis that the combined effect of family type over time is linked to 9th grade school behavior. Results indicated a significant multivariate effect of kindergarten family type for 9th grade teachers' perceptions of children's behavior at school ($F(3,29) = 3.47, p \leq 0.05$). Inspection of univariate effects reveal a significant main effect of kindergarten family type for teacher ratings of 9th graders' externalizing behavior ($F(1,31) = 6.35, p \leq 0.05$) and academic competence ($F(1,31) = 7.19, p \leq 0.01$). Ninth graders whose families were seen as not cohesive in kindergarten were seen as more aggressive and hyperactive ($M = 2.47, SD = 1.29$) and less academically competent ($M = 9.32, SD = 1.44$) than their peers in cohesive families ($M = 1.63, SD = 0.80$ for externalizing behavior; $M = 10.32, SD = 1.20$ for academic competence). No significant effects of family type for ninth graders' internalizing behavior were found ($F(1,31) = 0.01, p = 0.95$). No significant multivariate effects of 9th grade family type ($F(3,29) = 0.70, p = .56$) or the interaction of kindergarten and family type were found ($F(3,29) = 0.28, p = 0.84$).

Discussion

Consistent with previous studies exploring the links between family patterns and children's adjustment (Johnson, 1999, 2003; Lindahl & Malik, 1999; McHale & Rasmussen, 1998), the present study found family interaction patterns during early childhood predicted children's 9th grade adjustment. Adolescents whose families were characterized by a strong mother-child intergenerational alliance when they were in kindergarten were seen by teachers as being more aggressive, more withdrawn, and less academically competent than their peers in cohesive or father-child allied families nine years later. These results are similar to previous reports of linkages between whole family functioning and children's externalizing behavior in 1st grade (Johnson, 1999). Moreover, these findings suggest that when one parent is allied with his/her child to the exclusion of the other parent, it may put children at risk for later behavioral difficulties. A similar finding suggesting father-child allied family types in middle childhood are predictive of concurrent behavior problems at school (Johnson, 2003), further indicates that non-cohesive family patterns may be problematic, at least in so far as they are linked to children's problematic behavior at school. What is unclear is whether the particular type of alliance (i.e., mother-child or father-child allied family) is important or whether it is the intergenerational alliance itself that is potentially problematic.

Unlike Kerig (1995), the present study failed to find differences in concurrent links between family type and 9th grade teachers' perceptions of adolescent adjustment. Perhaps the most parsimonious explanation for this inconsistency is statistical in nature; low power due to the relatively small number ($n = 8$) of detouring families in this sample may explain why teacher reports of 9th graders' school behavior did not differ significantly depending on adolescents' family type. Alternatively, important methodological differences between Kerig and the present study are also noteworthy explanations for inconsistent results. Whereas Kerig relied exclusively on insider (parent and child) perceptions of family type, the present study used observational assessment of the entire family playing together to rate family functioning. Noller and Callan (1988) reported little correlation between insider and outsider perceptions of family interaction, suggesting that mothers and children's perceptions of families as separate or triangulated may differ from an outside observer's assessment of family

functioning. Further explanation for these differences may lie in the way children's behavior was measured. Kerig relied on parent reports of children's behavior in the home, where as the present study examined children's behavior at school. Consistently, teacher reports of children's behavior differ from parent reports of the same child's behavior (Achenbach, 1997). Future study of family type and children's behavior needs to include both insider and outsider perceptions of family functioning as well as assessment of children's behavior at home and in classrooms.

Moreover, changes in children's family environment from 1st grade to 9th grade were not linked to their 9th grade school behavior. It seems as though family functioning observed during the adolescent years may be less likely to predict teacher perceptions of adolescent behavior than observations of family functioning made during early childhood. This is contrary to earlier findings that changes in family functioning between kindergarten and 4th grade predict changes in teacher reports of children's behavior across a similar 4 year time period (Johnson, 2003). Children's school performance may be consistent over time such that less adaptive family patterns early on set in motion patterns of school adjustment that then influence later patterns of school adjustment. For example, children who have a rough start at school may continue to have problems which may be linked to patterns of family functioning when they were young (Cowan et al., 2005).

Because adolescent self-report of family cohesion and family adaptability consistency predicts internalizing behaviors among high-school and college students (Brage & Meredith, 1994; Cumsille & Epstien, 1994), it is doubtful that family is not influential in informing adolescent behavior at school. It is more likely, however, that by adolescence it is the child's perception of their family that is the better predictor of adjustment rather than actual family functioning (Sarason, Pierce, & Sarason, 1990).

One needs to be cautious however, in interpreting the findings reported here. The relatively small sample size and homogenous sample used in the current study pose limitations to the generalizability of these data. In particular, it is noteworthy that family participants volunteered to be studied over time, thus introducing selection bias as a possible study limitation. In addition, the laboratory context in which families were observed is a threat to the ecological validity of the findings reported here. In particular, there is little consistency in family type across time. Whereas this finding is similar to earlier analyses of consistency in family type from kindergarten to grade 4 with this same sample (Johnson, 2003), few longitudinal studies of whole family functioning are available for comparison. Replication of these findings with a larger sample that represents a more ethnically and financially diverse population is needed to verify the pattern of results reported in the present study.

Interestingly, unlike earlier studies reporting that adolescents' perceptions of family cohesion decrease across the adolescent years (Feldman & Gehring, 1988), no significant differences in triadic-level observations of family dimensions (i.e., cohesion, strength of family subsystems) were indicated in the present study. Family type, however, did differ significantly from early childhood to adolescence. Differences were found in the types of families identified at each family assessment session. Earlier analyses of family interaction patterns found evidence for cohesive families and parent-child allied families when children were in kindergarten (Johnson, 2003). What was unexpected was that the detouring family type and separate family type described by Minuchin (1974) was not found in the kindergarten family interaction data. The detouring and separate family types, however, were apparent in families with adolescents, whereas the parent-child allied family type was not identified at this assessment point. It is possible that the detouring and separate family interaction patterns described by Minuchin are more difficult to identify and do not lend themselves to be revealed during the brief family interaction paradigm used here. The

detouring family interaction pattern, in particular, may be best identified during more stressful, conflict inducing interactions. Notably, the different tasks used in the 9th grade family assessment may have enabled us to see detouring and separate family interaction patterns that were not apparent using the puzzle task from the kindergarten family assessment.

Alternatively, the differences in family types found when children were in kindergarten and 9th grade may be indicative of normative family adaptation. This finding supports Olson et al.'s (1983) idea that the characteristics of family systems may change as families progress over the life cycle. Using a cross-sectional design and the circumplex model of family systems, Olson et al. found that families may adapt to developmental change that occurs as family members age and mature. Therefore it is possible that the emergence of a separate family type and detouring family type with a strong mother-father subsystem during adolescence is an appropriate shift that reflects the family adjusting its rules, roles, and power structure to the changing demands of maturing family members. For example, during early childhood, parents may be drawn into strong parent-child alliance due, in part, to the parenting needs of their younger children. By adolescence parenting needs are often less "hands on", giving parents an opportunity to shift their attention back to the marital subsystem.

Implications for Clinical Intervention

Although preliminary, these data may have the potential to inform clinical intervention efforts aimed at reducing maladjustment in children. In particular, findings from the present study suggest that early intervention aimed at improving whole family interaction patterns when children are in early childhood may prevent children's academic difficulties, aggressive and hyperactive type externalizing behavior problems, and anxious/depressed/withdrawn internalizing behavior problems at school throughout early and middle childhood into adolescence. Because earlier findings suggest that children with some experience in a cohesive family between kindergarten and 4th grade show better school adjustment than children with no experience in a cohesive family during early or middle childhood (Johnson, 2003), it may be particularly important to intervene with families during early or middle childhood. These data suggest that by adolescence, family type no longer is predictive of 9th graders' school behavior. In particular, it seems as though families where the mother and young child have a particularly strong alliance, and the dyadic father-child and mother-father relationships appear weak should be of particular concern. Clinical intervention aimed at strengthening the marital relationship (mother-father dyad) may be an especially fruitful way of shifting a family's organization to move toward a more cohesive family type. This idea of strengthening the mother-father family subsystem is consistent with Minuchin's (1974) theorizing about the importance of the parental hierarchy within the family system.

There is often a question as to how best to intervene when a child is having difficulty. Should clinical services focus on the child or include the family? These data suggest that intervention aimed at improving children's behavior across the developmental trajectory would benefit from including the family. Attention to co-parenting may be a particularly useful method of combining services that both directly address the child's problematic behavior and work to strengthen the mother-father alliance. Similarly, prevention efforts focusing on strengthening family functioning and the father-child, or mother-father alliance are also indicated. Again, results from this study clearly indicate that parenting groups where both parents are present and that focus on co-parenting as opposed an exclusive focus on behavioral techniques for managing children's problematic behavior may be powerful in maintaining optimal child behavior at school, even buffering children from later difficulties in family functioning.

Acknowledgments

This investigation was supported by a College of Arts and Sciences Support and Development Award and a Faculty Development Award from West Chester University to the first author and by NIMH grant MH-31109 to Philip and Carolyn Cowan. The author would like to thank Kathy Aitkins, Juan Araneda, Lori Belinsky, Victoria Bondar, Steve Jarjisian, Maria Lorente, Jim Raines, and Julie Williams for their assistance with this project.

References

- Achenbach, T. What is normal? What is abnormal? Developmental perspectives on behavioral and emotional problems. In: Luthar, SS.; Burack, JA.; Cicchetti, D.; Weisz, JR., editors. *Developmental psychopathology: perspectives on adjustment, risk, and disorder*. Cambridge University Press; 1997. p. 93-114.
- Belsky J. The interrelation of parental and spousal behavior during infancy in traditional nuclear families: An exploratory analysis. *Journal of Marriage and the Family*. 1979; 41:749-755.
- Brage D, Meredith W. A causal model of adolescent depression. *The Journal of Psychology*. 1994; 128:455-468. [PubMed: 7932297]
- Buhrmeister D, Camparo L, Christensen A, Gonzalez LS, Hinshaw SP. Mothers and fathers interacting in dyads and triads with normal and hyperactive sons. *Developmental Psychology*. 1992; 28:500-509.
- Collins, WA.; Roisman, GI. The influence of family and peer relationship in the development of competence during adolescence. In: Clarke-Stewart, A.; Dunn, J., editors. *Families count: Effects in child and adolescent development*. Cambridge University Press; NY: 2006. p. 79-103.
- Cowan, PA.; Cowan, CP.; Ablow, JC.; Johnson, VK.; Measelle, JR. The family context of parenting in children's adaptation to elementary school. Erlbaum; Hillsdale, NJ: 2005.
- Cumsille PE, Epstein N. Family cohesion, family adaptability, social support, and adolescent depressive symptoms in outpatient clinic families. *Journal of Family Psychology*. 1994; 8(2):202-214.
- Deal JE, Hagan MS, Bass B, Hetherington EM, Clingempeel G. Marital interaction in dyadic and triadic contexts: Continuities and discontinuities. *Family Process*. 1999; 38:105-115. [PubMed: 10207713]
- Feldman SS, Gehring TM. Changing perceptions of family cohesion and power across adolescence. *Child Development*. 1988; 59:1034-1045. [PubMed: 3168612]
- Gjerde P. The interpersonal structure of family interaction settings: Parent-adolescent relations in dyads and triads. *Developmental Psychology*. 1986; 22:297-304.
- Hinde, RA.; Stevenson-Hinde, J. *Relationships within families: Mutual influences*. Clarendon; Oxford, England: 1988.
- Hinshaw SP, Lahey BB, Hart EL. Issues of taxonomy and comorbidity in the development of conduct disorder. *Development and Psychopathology*. 1993; 5:31-49.
- Johnson VK. Marital interaction, family organization, and differences in parenting behavior: Explaining variations across family interaction contexts. *Family Process*. 2001; 40:333-342. [PubMed: 11676272]
- Johnson VK. Linking changes in whole family functioning and children's externalizing behavior across the elementary school years. *Journal of Family Psychology*. 2003; 17:499-509. [PubMed: 14640800]
- Johnson VK, Cowan PA, Cowan CP. Children's classroom behavior: The unique contribution of family organization. *Journal of Family Psychology*. 1999; 13:355-371.
- Kerig PK. Triangles in the family circle: Effects of family structure on marriage, parenting, and child adjustment. *Journal of Family Psychology*. 1995; 9:28-43.
- Lamb ME. Twelve-month-olds and their parents: Interaction in a laboratory play room. *Developmental Psychology*. 1976; 12:237-244.
- Lindahl KM, Malik NM. Observations of marital conflict and power: Relations with parenting in the triad. *Journal of Marriage and the Family*. 1999; 61:320-330.

- McHale, JP.; Cowan, PC. Understanding how family-level dynamics affect children's development: Studies of two-parent families. Joessy-Bass; San Francisco: 1996.
- McHale JP, Fivaz-Depeursinge. Understanding triadic and family group interactions during infancy and toddlerhood. *Clinical Child and Family Psychology Review*. 1999; 2:107–127. [PubMed: 11225931]
- McHale JP, Johnson D, Sinclair R. Family dynamics, preschoolers' family representations, and preschool peer relationships. *Education and Development*. 1999; 10:373–401.
- McHale JP, Rasmussen JL. Coparental and family group-level dynamics during infancy: Early family precursors of child and family functioning during preschool. *Development and Psychopathology*. 1998; 10:39–59. [PubMed: 9524807]
- Minuchin, S. Families and family therapy. Harvard University Press; Cambridge, MA: 1974.
- Noller P, Callan VJ. Understanding parent-adolescent interactions: Perceptions of family members and outsiders. *Developmental Psychology*. 1988; 24:707–714.
- Olson, DH.; Gorall, DM. Circumplex model of marital and family systems. In: Walsh, F., editor. *Normal family processes: Growing diversity and complexity*. 3rd edition. Guildford Press; New York: 2003. p. 514-548.
- Olson, DH.; McCubbin, HI.; Barnes, H.; Larsen, A.; Muxen, M.; Wilson, M. Families; what makes them work. Sage; Beverly Hills, CA: 1983.
- Olson SL, Bates JE, Kaskie B. Caregiver-infant interaction antecedents of children's school-age cognitive ability. *Merrill-Palmer Quarterly*. 1992; 38:309–330.
- Pedersen, FA.; Anderson, BJ.; Cain, RL. Parent-infant and husband-wife interaction observed at age five months. In: Pedersen, FA., editor. *The father-infant relationship: Observational studies in the family setting*. Praeger; New York: 1980. p. 162-189.
- Sarason, BR.; Pierce, GR.; Sarason, IG. Social support: the sense of acceptance and the role of relationships. In: Sarason, BR.; Sarason, IG.; Pierce, GR., editors. *Social support: An interactional view*. Wiley; New York: 1990. p. 97-128.
- Teichman, Y.; Cowan, PA.; Cowan, CP. The family structure and process coding system. 1988. Unpublished coding manual
- Unger DG, Brown MB, Tressell PA, Ellis McLeod L. Interparental conflict and adolescent depressed mood: the role of family functioning. *Child Psychiatry and Human Development*. 2000; 31:23–41. [PubMed: 11033927]
- Unger DG, Ellis McLeod, Brown MB, Tressell PA. The role of family support in interparental conflict and adolescent academic achievement. *Journal of Child and Family Studies*. 2000; 9:191–202.
- Wagner, BM.; Reiss, D. Family systems and developmental psychopathology: Courtship, marriage, or divorce?. In: Cicchetti, D.; Cohen, DJ., editors. *Developmental psychopathology, Vol. 1 Theory and methods*. Wiley; New York: 1995. p. 696-730.

Table 1Means for teacher ratings of 9th grade school behavior by 9th grade and kindergarten family type

	9 th Grade Academic Competence	9 th Grade Externalizing Behavior	9 th Grade Internalizing Behavior
	Mean (SD)	Mean (SD)	Mean (SD)
9 th Grade Cohesive Families	9.80 (1.31)	2.10 (.98)	3.16 (1.44)
9 th Grade Separate Families	9.62 (1.73)	2.16 (1.56)	3.25 (1.15)
9 th Grade Detouring Families	9.30 (1.21)	2.60 (1.06)	3.12 (1.77)
Kindergarten Cohesive Families	10.18 ^A (1.15)	1.18 ^C (.87)	3.21 (1.08)
Kindergarten Father-Child Allied Families	10.18 ^B (1.15)	1.87 ^D (.74)	2.73 ^E (.95)
Kindergarten Mother-Child Allied Families	8.65 ^{AB} (1.24)	2.89 ^{CD} (1.48)	4.02 ^E (1.71)

Note. A, B, C, D, E indicate pairwise differences $p \leq .05$