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AUTHOR	Lee, Valerie E.; And Others
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ABSTRACT

This study gauged the effects of divorce and remarriage on the emotional adjustment of young adolescents. Using a large and nationally representative sample of eighth graders, the study investigated the incidence of school-related emotional and behavioral problems associated with variation in family structure. Data were collected on: (1) family structure; (2) dependent measures of behavioral or emotional problems; and (3) demographic variables that were introduced as statistical controls. Family configurations included intact family; mother/stepfather; father/stepmother; mother alone; and father alone. Statistical controls included gender, race and ethnicity, mother's age, socioeconomic status, and number of siblings. Findings indicated that the sorts of emotional adjustment problems studied were related to the structure of the family with which adolescents resided. School-related behavioral problems were between two and four times as likely in single-parent or stepfamilies as in intact families. Parent-reported emotional problems of children were more common among nontraditional family structures. Eighth graders were at least as likely to experience problems in households occupied by stepfamilies as in single-parent households. (RH)

Family Structure and Its Effect on Behavioral and Emotional Problems in Young Adolescents

Valerie E. Lee
University of Michigan

Herbert Zimiles
Arizona State University

Barbara Ladewski
David T. Burkam
University of Michigan

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Correspondence concerning this article should be addressed to Professor Valerie E. Lee, School of Education, University of Michigan, Ann Arbor, Michigan 48109.

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Abstract

That the growing incidence of divorce and remarriage has created academic and psychological problems for children is undisputed. This study investigates the incidence of school-related emotional and behavioral problems associated with variation in family structure, using a large and nationally representative sample of 8th graders from the *National Education Longitudinal Study of 1988 [NELS:88]*. Such problems, more common in boys, are much more prevalent in families where the natural mother is absent, especially in father/stepmother families. Using a multi- nomial logit model, the unique effects of family structure are evaluated after adjusting for demographic differences. An important finding is that interactions between the child's gender and that of the custodial parent critically affect outcomes, especially for girls.

Family Structure and Its Effect on Behavioral and Emotional Problems in Young Adolescents

This study attempts to gauge the effects of divorce and remarriage on the emotional adjustment of young adolescents. In particular, we use secondary analysis methods on a random sample of over 16,000 8th graders in about 1,000 randomly selected schools which enroll middle-grade students in the United States, drawn from the *National Education Longitudinal Study of 1988 (NELS:88)* and collected in 1988, to investigate these relationships. Besides extensive information from students, the base year of the *NELS:88* study also includes data from their parents, two of their teachers, and administrators in their schools. In this study, we contrast the behaviors of young adolescents from single-parent families, from intact families, and from families in which the custodial parent has remarried (i.e., step-families), and differentiate single-parent and stepfamilies by the gender of the custodial parent. While we use data collected in an educational context to evaluate students' emotional adjustment, we believe that the the dependent measures in this study -- behavioral problems and/or emotional problems -- affect students' academic progress. Of particular importance here is the 8th grader's gender, particularly the interplay between his or her gender and that of the custodial parent.

Background

Recent studies of the effects of family structure on the academic achievement and emotional development of children have strongly recommended a careful definition of the familial situation under study. For example, a number of studies have called for a clear differention among family types, suggesting that families with two biological parents differ in important respects from two-parent stepfamilies, that single-parent mother-custody families differ in important ways from single-parent families headed by fathers, and that single-parent families with one adult present differ substantially from single-parent families with a live-in partner or from single-parent families with a live-in grandparent (Hetherington, 1981; Hetherington, Camara & Featherman, 1983; Zill, 1988; Zimiles & Lee, 1991). Other studies have emphasized the importance of defining the initial cause of the family disruption, suggesting that divorce, death, separation, and

desertion may have very different impacts on the family (Hetherington et al., 1983).

Current research also views family structure as a continuous process, inextricably interwoven with the developmental processes of the child, rather than as a static state. Therefore, the time elapsed since the family disruption, the age of the child at the disruption, and the child's current age become important factors in understanding the effects of family structure on academic achievement and emotional development of children (Hetherington, 1988; Hetherington et al., 1983; Scott-Jones, 1984; Wallerstein, Corbin & Lewis, 1988). Other factors, such as the level of conflict in the family prior to divorce, the continuing level of conflict in the divorced and reconstituted family, and the conflict resolution styles of the parents are also important in understanding family structure from a process perspective (Block, Block & Gjerde, 1986; Camara & Resnick, 1988; Forehand, Long & Brody, 1988; Wallerstein et al., 1988). Further, many researchers argue that the larger environment surrounding the family must be considered, specifically that the impact of family structure cannot be examined without taking the socioeconomic status and ethnic background of the families under study into account (Hetherington et al., 1983; Scott-Jones, 1984).

Self-selected vs. population-based studies. In general, the approaches commonly used in research on the effects of family structure on children's development -- qualitative or quantitative studies of small clinical or self-selected samples of divorced and/or remarried families and quantitative studies using large probability samples of the general population of the United States -- have not been particularly effective in addressing all of the issues outlined above. While qualitative studies of small samples permit examination of the processes that occur within families, the information they provide concerning how common those processes are in the general population is limited. On the other hand, the very few quantitative studies of large probability samples permit a broader view of family disruption and reconstitution as it occurs within the general population, but provide only limited information about specific processes within families. Information from both types of study seems critical for building a comprehensive model to understand the effects of family structure on the academic achievement and emotional development of children.

The current study is of the second type. Specifically, we examine the frequency of emotional and behavioral problems in children as a function of family structure, using a subset of a large and current sample of 8th graders in the United States. Secondary analysis of this large nationally representative sample overcomes many of the methodological problems encountered in the first type of assessments of the effects of divorce and remarriage outlined above -- problems such as small numbers of suitable subjects; sampling bias from using volunteers, clinical, or self-selected populations; and response bias stemming from subjects' awareness of the purpose of the study. The sample we employ includes both parent and student responses, providing important opportunities for cross-checking both the reliability and validity of information. As such, the *NELS:88* data provide very reliable information on current family status; measures of family background such as race/ethnicity, social class, family size, and gender of 8th graders; as well as measures of a large number of school-related emotional, behavioral, and academic outcomes.

On the other hand, because the major purpose of the NELS:88 survey was to study school effects rather than outcomes specifically related to the phenomenon under study here, the information it provides on family structure is somewhat limited. Specifically, we know little about either when family dissolution occurred or the circumstances under which this occurred. In addition, it is unknown how many divorces or remarriages are represented by the current family status. This factor may be important in studying the effects of family disruption and reconstitution, based on the Furstenburg et al. (1983) report that of the children in the National Survey of Children (NSC) sample with one parent who remarried, 37.3% experienced a second divorce.

Gender issues in family structure. Several recent studies have suggested that looking at the effects of family structure alone, even if the structure is differentiated by the gender of the custodial parent, does not capture some important mechanisms at work in the family setting. These researchers suggest that it may be the gender match or mismatch of the custodial biological parent and the child, rather than the independent effects of either family structure or the gender of the custodial parent, that governs the effect of family structure on children (Camara & Resnick, 1988; Santrock, 1972; Warshak, 1986; Zimiles & Lee, 1991). For example, Zimiles & Lee (1991), using secondary data analysis of a longitudinal sub-

sample of the nationally representative *High School and Beyond* study from 1980 and 1982, found that high school dropout behavior showed a significant family structure-by-gender interaction. Specifically, they found that adolescents living in single-parent families were more likely to drop out of school between their sophomore and senior years when they had an unlike-gender custodial parent. Among stepfamilies, however, the pattern was reversed -- adolescents were more likely to drop out when they lived with their same-gender biological parent. Based on these results, we have chosen in the the current study to investigate the importance of the interaction between family structure and gender on the frequency of emotional and school- related behavioral problems of 8th graders.

Demographic issues in family structure. The tendency in family structure studies has been to avoid taking into account the demographic characteristics of the family. One of three strategies typify these studies' approach to this issue. Either (a) they have ignored the importance of socioeconomic status (SES) and race/ethnicity, (b) they have chosen to constrain the samples examined (usually to White, middle-class families), or (c) they have been constrained by small sample sizes to studies of a particular racial group or a restricted range of SES (again, usually White middle- or upper-middle class families). Because of the extensive array of demographic data and the large sample used in this study, it was possible to introduce statistical controls for the effects of SES and racial/ethnic background, and to examine the possible interactions between family structure and these two important characteristics of social background. In addition, we have introduced other statistical controls which may mediate the effects of family structure on children's emotional well-being. An important factor here, given the exigencies of "blended" families, is the number of siblings living in the household. Another factor which has been shown to be important in these studies is the age of the mother at the time of the child's birth. Besides including statistical controls for these demographic characteristics of families, we are also able to investigate potential interaction effects of these factors with family structure.

Uncertainty of causal direction. Many studies of the effects on children of differing family structures have focused on such educational progress outcome measures as aptitude, school achievement, or some form of teacher evaluation (e.g., grades). This study expands the literature on

the effects of family structure on school-age children by examining these effects on the frequency of emotional and school-related behavioral problems, as reported by the children's parents and their schools. As in all cross-sectional studies (including this one), the direction of causality is difficult to establish unequivocally (Scott-Jones, 1984). There is little doubt that the relationship between family structure and emotional or behavioral problems in children is reciprocal. That is, family stress is very likely to increase the frequency of children's emotional or behavioral problems, and these problems may in turn result in increased family stress, and then more emotional or behavioral manifestations. On the other hand, the presence of children with emotional problems in a single-parent household may affect the probability of remarrying, depending on the gender of the custodial single parent. Either potential marriage partners may be discouraged (especially for single mothers), or the single parent may actively pursue remarriage in order to get help with the problem (more likely a single father).

Another difficulty for establishing causal direction in cross-sectional research is the necessary uncertainty about whether the effects observed are a function of the current family status, or of the previous family history. This may be a particular problem for families where fathers are awarded more than 50% custody. Such families are certainly not representative of typical divorced families. A substantial portion of mother-absent families are likely to have experienced severe trauma and/or pathology, where the mother died, deserted the family, or where the mother was judged unfit to participate in at least joint custody (Camara & Resnick, 1988).

It is always possible that a spurious factor, highly correlated with family structure, might be the true cause of the observed effects of family structure. For example, some researchers have found that the highest average stress levels in families tend to occur in "blended" families (i.e., where siblings of previous and current marriages co-exist in the same household), and that on the average father/stepmother families are more likely to be blended (Zill, 1988). Other researchers have suggested that families "self-select" to divorce, and that parents who divorce may have more emotional problems than parents who do not divorce (Emery, 1988). If this is true, then children of divorced parents could be predisposed to emotional problems of genetic or environmental origin, unrelated to their family status *per se*.

Recognizing the possibility of a reverse causal order, we are assuming in this study that family structure causes emotional and/or behavioral problems in children, and not the reverse. Because of the limited family history information available in the *NELS:88* study, the cross-sectional sample does not permit the formulation of a model that describes the actual mechanisms through which family structure may influence emotional and behavioral outcomes in children. Neither can we rule out, therefore, the possibility that a third factor highly related to family structure may be the real cause of the effects observed.

Method

Sample

The data analyzed in this study are a subsample of the base year data (1988) of the *National Education Longitudinal Study of 1988 (NELS:88)* (Ingels et al., 1989a, 1989b). Based on a two-stage stratified probability design, the *NELS:88* study yielded a nationally representative sample of schools that include the 8th grade (815 public and 237 private or Catholic) and a nationally representative sample of close to 22,000 8th-grade students in the United States. The *NELS:88* base-year data include survey information from students, one parent of each student (usually the mother), administrators in each school, and two of their teachers, as well as standardized achievement test scores for all students in mathematics, science, reading, and social studies.

The subsample. The subsample we use in this study was created by including those subjects satisfying the following data filters. First, we selected only those cases with data on the separate student, test, teacher, school, and parent files. Second, we selected students who lived in the respondent parent's household more than 50% of the time (based on parent responses to the *NELS* variable BYP1B). Third, we made an attempt to construct a highly reliable measure of family status. Therefore, only those subjects were included in which the report of family status was consistent between reports from the student (BYFCOMP) and the parent (BYP1A1 and BYP1A2). In addition, we included only those students whose parent report of marital status (BYPARMAR) was identical to the parent report of family composition (BYP1A1 and BYP1A2). Fourth, we selected only those subjects where the intact families and stepfamilies were married, and only single-

parent families who reported no other live-in companions. Fifth, we restricted the sample to those where neither the student nor any teacher reported that the student had serious difficulties with reading, writing, speaking, or understanding English (based on BYLEP). Finally, we selected only students from the following ethnic backgrounds: Hispanic, Black, or White (including Asians).[1] Due to very small numbers, Native American students were not included. These selections resulted in a total sample of 16,621.

Missing data. Recognizing that the multiple selection criteria could introduce bias away from a nationally representative sample, we compared the demographic characteristics of the students and families included and excluded from our subsample. The excluded group (n=4,641) had significantly more boys, more Hispanic and Black students, more students attending public school, were of slightly lower SES, came from somewhat larger families, achieved at a slightly lower level, and were very slightly more likely to have emotional problems and behavioral problems. Therefore, our selection criteria -- which eliminated students in non-standard family configurations and those who completed questionnaires inconsistently -- resulted in a slightly more advantaged sample. In essence, we chose to maximize reliability of our measure of family structure, but recognize that this decision detracts somewhat from the generalizability of our results to a nationally representative sample of U.S. 8th graders. We suggest that the direction of bias introduced by such exclusions would be toward a slight underestimation, rather than an overestimation of effects.

Measures

Given our focus, the study includes measures of three constructs: (1) family structure, (2) the dependent measures of behavioral and/or emotional problems, and (3) demographic variables introduced as statistical controls.

Family structure. We constructed a 5-level categorical variable describing family structure, which includes the following family configurations: intact family (student living with both biological or adoptive parents), mother/stepfather, father/stepmother, mother alone, and father alone. As stated previously, other family configurations (which were very small in number) were excluded. We contend that the rather stringent criteria for selecting the sample, whereby students and parents had to agree on descriptions of their families, result in a somewhat more reliable measure of

family structure than that used in the Zimiles and Lee (1991) study.

Behavioral and emotional problems. The dependent measure is a 4-level categorical variable indicating the presence of behavioral and/or emotional problems. The four mutually exclusive levels include: (1) no behavioral or emotional problems, (2) behavioral problems only, (3) emotional problems only, (4) both behavioral and emotional problems. Identification of these problems was based primarily on parental reports. We defined the measure of the existence of behavioral problems on the respondent parent's affirmative response to both of the following items (Ingels, et al., 1989b): "Has your 8th grader ever been considered a behavioral problem in school?" (BYP50) and "Since your 8th grader's school opened last Fall, has the school contacted you three or more times about your 8th grader's behavior?" (BYP57E). This selection procedure, meant to eliminate students with mild behavioral problems, brings to bear not only parents' opinions but schools' interventions. Existence of emotional problems was coded from a positive response to a single question, "In your opinion, does your 8th grader have an emotional problem?" (BYP47H). Unfortunately, a school contact measure for emotional problems was unavailable in the database. The low proportions of students identified with these problems suggests, perhaps, that the problems are rather severe.

Demographic control variables. As suggested in the review of the family structure literature, we believe that it is important to take demographic characteristics of the child and family into account when assessing these effects. Based on those characteristics suggested by the literature, we conducted an extensive exploratory analysis to identify an appropriate set of confounding variables which were related to both family structure and our dependent measures. Those we have included in our analyses as statistical controls include the following:

- *Gender*. A two-level categorical variable (SEX), coded girls=1, boys=0.
- *Race/ethnicity*. Computed from the 3-level categorical variable RACE, we created two dichotomous variables -- BLACK (1=Black, 0=non-Black) and HISPANIC (1=Hispanic, 0=non-Hispanic). Thus, the comparison group is Whites.
- *Mother's age*. We were interested in identifying students whose mothers had been teenagers when the children were born. We thus computed the mother's age at the time the 8th grader was born as the difference of

parents' reports of their current age and the age of the child. This was recoded into a dichotomous variable, indicating whether or not the mother was under 18 when the 8th grader was born (coded 1) or 18 or older (coded 0). For father/stepmother families, the stepmother's age at the birth of her stepchild was used (as data on the natural mother was unavailable); for single-father families, the father's age at the birth was used (again, since we had no data on mothers).

- o *Socioeconomic status*. SES is a continuous composite measure (BYSES), that was constructed to include measures of parents' education, occupational prestige, family income, and possessions (computed for the custodial parent). In the multivariate analyses, this was dichotomized into above- (1) and below-average (0) SES.
- o *Number of siblings*. We used a parent-reported continuous measure of the number of siblings currently living at home (including step- and half-siblings -- BYP3B).

Method

Multinomial logit. Given the categorical nature of the outcome, the techniques of ordinary least squares (OLS) regression or analysis of variance (ANOVA), which are typically employed in large-scale research of this nature, are not appropriate here, as both techniques assume a continuous, normally distributed dependent variable. To accomodate the 4-level outcome, we employed a multinomial logit model, a special case of the general log-linear model, as our major analytic method. The multinomial logit model estimates the *log-odds* of one event occuring in contrast to some other event, and provides parameter estimates of the linear change in log-odds due to various independent variables. While the statistical and computational frameworks differ from OLS, interpretations of the relative magnitude and statistical significance of coefficients can be made similarly. A more detailed discussion of this technique is provided by Anderson et al. (1980), Feinberg (1987), or Knoke and Burke (1980).

Variable specification. With four outcome categories, three contrasts in the dependent measure are possible. Here we have contrasted the three emotional adjustment problem categories (emotional problems, behavioral problems, and both types of problems) with the group without problems. Hence, independent variables estimate the increase or decrease in the likelihood of students exhibiting behavioral problems, emotional problems,

or both, compared to students who do not exhibit either of these problems. Categorical independent variables are used quite distinctly from continuous predictors in the log-linear computational process, whereby the log-linear technique creates a multi-dimensional contingency table (based on all categorical variables in the model) and computes cell frequencies. From these frequencies, the effects of the categorical predictors on the outcome are estimated. Goodness-of-fit statistics, which are measures of how well the model fits the data, are based on this framework. Continuous predictors are involved in the model as cell covariates through adjustment of cell means.

We have employed the categorical (rather than continuous) versions of independent variables whenever it seemed appropriate to do so (e.g., for SES and mother's age), as the log-linear model is optimally a statistical technique for categorical variables. Interpretation and significant tests of the partialed coefficients for either type of variable are similar to OLS. As the *NELS:88* design included oversampling of certain subgroups, we have employed design weights to adjust for this oversampling in all analyses, allowing generalization to the population of American 8th graders in 1988 (recognizing the caveats we mentioned earlier about our sample selection). In most analyses, missing data were deleted listwise.

Testing for interactions. One of our hypotheses, based on the findings in a similar study (Zimiles & Lee, 1991), suggests that the effects of family structure on emotional well-being are different, depending on the gender of the student and his or her custodial parent. In statistical terms, this would suggest the presence of an interaction between family structure and student's gender. A major advantage of the analytic technique we employ here is the fact that log-linear models are designed to investigate the presence of such interaction terms quite easily. Beginning with a model that includes all possible two-way interaction terms, we may employ a backward substitution algorithm that sytematically eliminates interactions on the basis of their contribution to model fitness. As long as model fitness proves adequate (i.e., there are no significant differences between observed and predicted cell frequencies), non-significant interaction terms may be removed one at a time, beginning with those exhibiting the highest p-values. Each time an interaction term is removed, the multinomial logit model and its goodness of fit statistics are re-computed. This proceess is repeated until the removal of any further terms

would induce a significant goodness-of-fit test (indicating a statistically inferior model). The end result is an optimally parsimonious model, including all main effects and only those interactions which significantly contribute to the model.

Results

Family Structure, Behavioral, and Emotional Problems

The relative frequencies of the types of emotional adjustment problems investigated in this study, and their association with the probability of living in each type of family structure, are displayed in Table 1. Those students with both emotional and behavioral problems are included in the column labeled "Both."[2] Clearly, these problems (as defined here) are relatively infrequent in the population. Only 3% of American 8th graders have serious school-identified behavioral problems (or 3.7%, if those in the "both" column are included), 1.8% have emotional problems (or, again, 2.5% if one includes both groups), and 0.7% have both types of emotional adjustment problems. The overwhelming majority of 8th graders (94.5%) exhibit neither type of problem. Different family structures are also unequally distributed, with the large majority of children (71.4%) living in intact families with both biological parents. The next most common structure is single-parent families headed by mothers (15.1%), followed by remarried families in which children live with their natural mothers and step-fathers (9.4%). Far less common are families where children reside with their natural fathers but not their natural mothers -- remarried fathers and stepmothers (2.2%) and single-parent families headed by fathers (1.8%).

Insert Table 1 about here

Family structure and emotional adjustment problems are significantly related [$X^2(3,4)=288$, $p \leq .001$]. Problems of this sort are least likely to occur in intact families. All types of problems are at least twice as common in stepfamilies compared to intact families, particularly those headed by the natural father who has remarried. Single-parent families have more children with behavioral problems than do intact families, particularly father-only families. Single-mother families also contain over twice as

many children with emotional problems as intact families. There are, however, demographic factors which might account for these relationships. We turn, then, to an investigation of demographic differences which might be associated with family structure.

The Demographic Characteristics of Various Family Structures

Table 2 displays the relationship between family structure and the child's gender, race/ethnicity, his or her mother's age, the family's SES, and family size. For each demographic characteristic, we have tested (with either crosstabulation or one-way ANOVA) the contrast of each family structural grouping against intact family status. Each demographic characteristic teristic shows some significant differences across the family structural groupings. For example, girls are more likely to live in families which include their natural mothers -- the children in mother/stepfather families are 56% girls, and those living with single mothers are 54% girls. On the other hand, boys are more likely to live in families headed by their natural fathers -- 55% of children in father/stepmother families are boys, as are 57% of those living with single fathers.

Insert Table 2 about here

The family structure of the two racial/ethnic groups we have considered are rather different. While Black children are quite likely to live with their natural mothers but not their natural fathers (especially in single-mother families, which are 27% Black), Hispanic children are particularly unlikely to live in stepfamily situations.[3] The proportion of children whose mothers were under 18 when they were born also varies by family structure, with children living in both types of stepfamilies more likely to have young mothers, compared to intact families. Social class is significantly lower for every category of family structure, compared to intact families.[4] Single-mother families are of particularly low SES (69% are below-average SES). Family size, represented here by the number of siblings residing in the household with each 8th grader, is also associated with variation in family structure. In particular, the largest families are headed by the natural father and a stepmother, most likely because both parents have brought their children from their first marriages into the household. Children living in single-parent families (especially those

headed by fathers) have the fewest siblings in the household.

The Demographic Characteristics of Children With Problems

As was the case for family structure, family and student demographics are related to the likelihood of children exhibiting behavioral or emotional problems. These relationships, displayed in Table 3, were also tested with cross-tabluations or one-way ANOVAs, contrasting each problem category against the group without problems. Consistent and important demographic differences are evidenced between children with and without behavioral problems, with problem children very significantly more likely to be boys (75%), Black (17%) or Hispanic (11%), to have especially young mothers (20%), to come from lower-SES (63%) and from larger families (1.8 siblings). As before, these proportions would be even higher if the children with both behavioral and emotional problems were included here. On the other hand, the probability of emotional problems is related only to SES (lower) and numbers of siblings (also lower).[5] Only one demographic factor -- gender -- is associated with the probability of children simultaneously exhibiting both types of problems, and this group is 70% boys. The bivariate relationships displayed in Tables 2 and 3 strongly suggest the necessity of including statistical controls for these demographic factors in our multivariate analytic models, to which we now turn.

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Insert Table 3 about here

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Multivariate Models of Family Structure and Non-Academic Problems

Model A -- Without interaction terms. The results of the multinomial logit causal model, which tests the effect of family structure on the probability of children exhibiting behavioral problem, emotional problems, or both types of problems, are displayed in Table 4. These results simultaneously compare the probability of behavioral problems, emotional problems, and both problems to the probability of no problems. The results are in a standardized log-odds metric, which means that the magnitudes of coefficients may be roughly compared. Nominal significance levels are computed by dividing coefficients by their standard errors, which are displayed in parentheses below each coefficient. Again, the contribution of each family structure variation is compared to intact families.

Insert Table 4 about here

Family structure effects. Consistently for every type of family structure and each type of problem, the probability of children having problems is very significantly greater than for intact families ($p \leq .001$ in each case). Comparing the size of the coefficients, families headed by natural fathers (with and without stepmothers) but without natural mothers are especially likely to exhibit problems. This is most noticeable for the few father-headed families where children exhibit both types of problems.

Demographic effects. Two demographic characteristics -- social class and race (Black) -- are significantly related to the probability of children exhibiting either behavioral or emotional problems. Chi dren from lower-SES families are more likely to exhibit either type of problem (but not both). Black children are significantly more likely to exhibit behavioral problems, but significantly less likely to be described by their parents as exhibiting emotional problems. Hispanic ethnic status is not related to the probability of problems in this multivariate model. Two demographic characteristics are related to behavioral but not emotional problems -- gender and having a young mother. Reflecting the bivariate results, 8th grade girls are much less likely to exhibit behavioral problems, and chidren with especially young mothers are more likely to have behavioral problems. Large families (i.e., children with more siblings in the home) typify children with both emotional and behavioral problems, and these children are more likely to be boys.

The Chi-Square goodness of fit test (X^2=365, $p \leq .01$) suggests, however, that this multivariate model does not fit the data particularly well.[6] This result suggests that we turn to an analytic model which includes interaction terms. Moreover, because we have hypothesized a difference in the relationship of family structure to the probability of problems for girls and boys, an interaction model is also indicated to test this theoretical model.

Model B -- With interaction terms. The analytic model displayed in Table 5 is identical to that in Table 4, except that the backward substitution algorithm for testing interactions described above is employed. All possible interactions between independent variables were individually tested for significance. Through this process, all interaction terms except

for two were removed. One significant interaction involved the family structure construct, and the other was between two of the demographic covariates. As hypothesized, the interaction between family structure and gender was significant. The second significant interaction was between ethnicity and gender. Other non-significant interactions were eliminated (including those between family structure and both SES and race/ethnicity. Because of the theoretical focus of this paper, the interaction between ethnicity and gender was conceptually eliminated, along with the other interactions that were statistically eliminated.

Insert Table 5 about here

Table 5 includes the results of our final multinomial logit model, with the gender-by-family structure interaction terms included. Note that including this set of interactions has rendered both tests of model fitness acceptable (G^2 and X^2), in that the differences between observed and predicted frequencies are no longer significant (even without including the significant gender-ethnicity interaction). Thus, we can be sure that our model provides a very good representation of the data.

Comparing the results of Tables 4 and 5, we see that two consistent changes have occurred. First, across the three problem groups, the main effects for family structure have consistently *increased* while the main effects for gender have *decreased*. Because they are not included in interaction terms, the main effects for the other demographic control variables (i.e., race/ethnicity, mother's age, SES, and numbers of siblings) are of almost identical magnitude in Tables 4 and 5. The pattern of statistical significance has remained unchanged. However, the interesting relationships suggested in Table 5 are the interaction terms, in which almost all interaction terms are *positive*. This suggests that once we have statistically controlled for the lower probability of problems for girls than for boys (i.e., the significant negative coefficient for the gender variable), the effects of family structure are actually stronger for girls than for boys. To illustrate these comparisons directly, we have computed these effects, separately for 8th grade boys and girls in Table 6.[7]

Insert Table 6 about here

Two findings are especially important here. First, the log-odds coefficients in Table 6 are all positive, indicating that the effect of each family structure variation on the probability of behavioral or emotional problems is greater, compared to intact families. The second finding relates to gender. Although we know that girls are less likely than boys to exhibit such problems, once we have taken this main effect into account, on these outcomes girls appear to be more adversely affected by family structure differences than boys. These *gender differences* in the effect of family structure are statistically significant in 3 instances. Girls living in families with their natural mothers who have remarried (i.e., mother/stepfather families) and those living in and single-father families are even more likely to exhibit behavioral problems. Additionally, girls in families where their natural fathers have remarried (father/stepmother families) are more likely to have simultaneous behavioral and emotional problems.

Discussion

Summary of Findings

It is clear that the sorts of emotional adjustment problems we have investigated in this paper are related to the structure of the family with which young adolescents reside. It is striking that school-related behavioral problems are between 2 and 4 times as likely to occur in single-parent or stepfamilies as in intact families. Likewise, parent-reported emotional problems are more common among non-traditional family structures. Another important finding we would like to highlight is the fact that 8th graders are at least as likely to experience problems as a result of living in households occupied by stepfamilies as in single-parent households.

As other researchers pursuing this topic have noted, certain demographic characteristics of children and families are strongly associated with both family structure and the prevalence of behavioral and emotional problems. Other than in intact families, natural mothers are more likely to have custody of girls, and natural fathers custody of boys. The socioeconomic status of both step- and single-parent families is below that of intact families, especially those families headed by single mothers (and probably an outcome of family dissolution). Race/ethnicity and family size are also associated with family structural differences. Demographic

differences are much more strongly related to behavioral than emotional problems. Especially likely to demonstrate behavioral problems are boys, children from disadvantaged homes (especially from minority and low-SES families), and children from larger families and whose mothers are especially young. While these findings are interesting in themselves, for the most part (except for the student's gender) we have confined our focus on demographic differences to their use as statistical controls, rather than as substantive topic of inquiry.

In multivariate models in which these demographic differences are taken into account, we have found that children from non-intact families are much more likely to experience either behavioral or emotional problems (or both) than their counterparts living with both parents. When the gender of the child and custodial parent are considered, the patterns of these effects is rather complex. It is in households where the natural father is present (but not the natural mother) that 8th graders are especially at risk for these problems. When the generally lower probability of girls exhibiting behavioral (but not emotional) problems is taken into account, however, it is almost always these young adolescent girls who seem to be particularly adversely affected by a non-traditional family structure. Moreover, this family structure-by-gender interaction is particularly marked when girls live with their natural mothers who have remarried, or when they live with their father when he heads the household single-handedly.

Conclusions and Speculations

While noteworthy, it is unsurprising that disruptions in family structure produce important consequences for the emotional adjustment of young adolescents. Nor is it surprising that children of this age are particularly strongly affected by not living with their mothers. In a divorce, it is still rather unusual for fathers to be awarded custody, and it has been speculated (e.g., by Camara & Resnick, 1988) that such families might have experienced unusual disruption with the mother's departure.

Our results confirm those reported by Zimiles and Lee (1991), who found that high school girls (but not boys) were more likely to drop out of school when living in households with a stepfather than a stepmother. This is particularly striking when we consider that the Zimiles and Lee study explored different outcomes (achievement grades, dropping out), for children of different ages (high school seniors), and used data collected

almost a decade earlier (1980 and 1982). Those researchers also found that girls living with single mothers were somewhat less likely to drop out than those few living with single fathers. Zimiles and Lee's results are replicated by our findings that young adolescent girls are more at risk of evidencing behavioral problems under these circumstances. An explanation for such gender-related findings has been suggested by Giles-Sims and Crosbie-Burnett (1989), who hypothesized that the formation and then disruption of especially strong emotional bonds between a child and a single-parent of like gender could be especially damaging. Another likely explanation of the stronger effects on girls is the unequal maturity of young adolescent boys and girls. While girls have generally experienced full-fledged adolescence by the 8th grade, with all the physical and emotional disruption that suggests, their male peers are much less mature at this age. In fact, gender differences in maturation are never larger than at this age. It is, therefore, not surprising to find that girls in early adolescence are differentially more strongly affected by family disruption.

That the effects of family structure differ by gender has been confirmed by other studies. However, those studies have generally reported that the effects of marital conflict and divorce are more profound for boys than for girls. Of particular relevance to this study, boys from divorced families were reported to evidence a greater frequency of behavioral and emotional problems at home and at school, compared to children from intact families and to girls from divorced families (Hetherington, 1988; Hetherington, Cox & Cox, 1978, 1979a, 1979b; Rutter, 1979). Clearly, the findings from this study are not consistent with those other researchers have reported. We believe there is an explanation for that inconsistency. Our results from bivariate analyses (especially Table 3) certainly confirm that boys are much more likely to evidence behavioral problems, and also that there are gender differences in family structure (Table 2). The previous studies were mostly qualitative or quantitative studies of small non-random (or clinical) samples, which precluded the researchers' ability to isolate and examine separately the effects of gender, family structure, and *especially* the gender-by-family structure interaction. The large and nationally representative sample in this study, which uses the excellent *NELS:88* database, has allowed us to employ a methodological approach where the interaction effect may be examined after taking account of the main

effects of gender and family structure. We contend that it is only in this context that gender effects are appropriately investigated.

We must admit to several weaknesses in this research. While the study would greatly benefit from information about the length of time these young adolescents have lived in the family structures they are currently experiencing, or about the causes of the family disruption, such information is not available in a general educational survey such as *NELS:88*. Moreover, as noted earlier, we are hypothesizing the likely causal direction of family structure and the manifestation of school-related problems. However, since these data are cross-sectional we are unable to confirm this direction. Another imperfection is our dependent variable. Although the measure of behavioral problems seems quite reliable (as it includes both parents' assessments of their children's behaviors and the frequency of reports of school contacts for behavioral problems), our measure of emotional problems includes no such cross-checks and is therefore totally dependent on potential parental bias to either over- or underestimate these problems.

On the other hand, there are several strengths which we believe offset, at least in part, the weaknesses described above. Most important is the sample itself. These are current data, collected on a developmentally important age group that has seldom been the focus of large-scale educational study. As the incidence of behavioral and emotional problems (at least as we have defined them) is not high in the population, we assert that it is only with such large and nationally representative samples that a study of this sort is possible. To be able to generalize to the contemporary American population of 8th graders is a strong advantage, and one that is seldom chracteristic of studies on family structure. Additionally, several of the family structural groupings are rather rare (especially, father/stepmother and single-father families, which together represent less than 5% of the population). As we have demonstrated, disaggregation of stepfamilies and single-parent families by the gender of the custodial parent has allowed us to uncover some very interesting findings that are not evident from bivariate analyses. Clearly, without large and representative samples, it would be impossible to isolate these findings, to investigate these interaction effects (as discussed above), and to generalize to the population of 8th grade students.

We have employed a sophisticated statistical method and a fully multivariate model, including controls for several demographic characteristics

which have been hypothesized to affect behavioral outcomes and family structure, but which have heretofore seldom been included as covariates in studies on this topic. More typical of such studies is to restrict the sample to one with which researchers are familiar (especially White middle class children). Here we have included the full range of social class background, as well as two important minority groups (Blacks and Hispanics)[8].

It is clear that relying on the simple dichotomy of "single-parent family" and "stepfamily" to represent family structure departures from the traditional or intact family status is unsatisfactory. We would like to underline the contention made by Zimiles and Lee (1991) -- that not only are the gender of the child and of the custodial parent important to consider as main effects in a study which investigates how family structure differences affect children's development, but that the interaction of the two is crucially important. We suggest that researchers pay very close attention to this interaction in further studies on this topic. While self-selected "convenience" samples, usually of small size, are appropriate to examine the process of family disruption, they are seldom adequate to address the important gender interaction we have identified here, and may thus overlook an important constituent part of the process. Moreover, we believe our findings add to the growing body of research which documents that single-parent families are not "pathologies" which necessarily need "correcting" by remarriage. Introducing another adult into a child's life, to serve in the difficult parental role, may not always be an improvement, at least from the child's point of view.

Technical Notes

1. In this regard, this study differs from the Zimiles and Lee (1991) study, on which it was initially patterned. While those researchers limited their sample to White high school students from families where mothers had at least a high school education, here we include middle-grade students from other racial/ethnic minority groups (Hispanic, Black) and have made no sample restriction on parental education. The different approach here is related to the type of dependent variables we explore, and to the relative scarcity of these emotional adjustment problems in the more restricted sample employed by Zimiles and Lee.

2. The proportions of students with behavioral and emotional problems may be slightly misleading (and, at first glance, too low) in Table 1, given our decision to define a separate category of students with both types of problems. This decision was based on the definition of our 4-level outcome in the multivariate analyses, where discrete and independent groups are crucial. We present the distribution of emotional adjustment problems by family structure (Table 1) and social background (Table 3) in this way in order to use completely consistent samples to those in our forthcoming multivariate analyses.

3. Perhaps this is because Hispanics are likely to be Catholic, a religion which does not recognize divorce.

4. Clearly, SES (especially family income) could be an outcome of, as well as a predictor of, family structure (especially for single-mothers). To test this, we constructed an SES measure without family income and compared its effect to the *NELS*-supplied variable, which includes income. As the difference in effects was negligible, we have employed the *NELS* variable here.

5. Frankly, we find the lack of demographic differences between children with and without emotional problems a bit puzzling. This may be due to the fact that the emotional problems factor is entirely parent-reported, while the behavioral problems factor includes the notion of school contact for such problems, and may thus be more reliably measured. Perhaps, for some parents, the identification of such problems in their children is difficult, particularly if they live within a family environment which may be more problematic in the first place. Unfortunately, we are unable to empirically test this conjecture with these data.

6. The Goodness-of-fit statistics in Table 4 give conflicting information. The Likelihood ratio statistic (G^2) indicates a good model fit, with no significant differences between observed and predicted cell values. However, the Pearson Chi-square statistic (X^2) suggests inadequate model fit, indicating the need for higher order interaction terms. In the presence of sparse tables, i.e. tables with many sampling zeros, the Chi-square statistic is considered preferable (Feinberg, 1987). Hence, in this situation, we should expect significant interactions.

7. The coefficients for boys in each family structure presented in Table 6 are identical to those shown in Table 5 as the main effects for family structure, because boys were used as the comparison group. The gender-by-family structure interaction terms shown in Table 5 represent the

extent to which this effect differs for girls compared to boys. Therefore, the "girls" coefficients in Table 6 are sums of the family structure main effect and the gender-by-family structure interaction term.

8. While Zimiles and Lee (1991) restricted their sample "because of the expectation [of] complex interactions involving ethnicity and sociocultural characteristics of family background" (p.315), the multinomial logit technique has, fortunately, allowed for explicit testing of such hypothesized interactions. Specifically, we found no significant interactions between eith race (Black), ethnicity (Hispanic), or SES and family structure. Of course, the main effects for race, ethnicity, and SES are rather strong, and are therefore included as demographic covariates in all models.

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Table 1

Family Structure and the Occurrence of Non-Academic Problems

	No Problems	Behavioral Problems Only	Emotional Problems Only	Both
Sample size[a]	15,748	468	290	115
Percent[b]	94.5	3.0	1.8	0.7
% Intact Family (71.4%)[c]	96.2	2.2	1.2	0.4
% Mother/Step-father Families (9.4%)[c]	90.3	5.0	3.2	1.5
% Father/Step-mother Families (2.2%)[c]	83.9	7.5	5.0	3.6
% Single-Mother Families (15.1%)[c]	91.2	4.3	3.3	1.2
% Single-Father Families (1.8%)[c]	89.5	5.8	3.5	1.3

X^2=288.09 ($p \leq .001$)

[a]Unweighted sample size.
[b]Weighted proportions and means.
[c]Overall occurence in the sample.

Table 2

Demographic Characteristics of Students by Family Structure

	Intact Families	Mother/Step[a] Father Fam.	Father/Step[a] Mother Fam.	Single-Mom[a] Families	Single-Dad[a] Families
% Girls	50.0	55.7***	44.6*	53.7***	42.6**
% Blacks	6.6	9.9***	5.5	26.8***	7.3
% Hispanics	8.3	6.6*	5.6*	8.4	6.3
% Young Mothers	11.8	24.0***	19.7***	12.5	2.3***
% Above-Average Social Class	53.1	44.5***	47.1*	30.5***	46.6*
# of Siblings	1.59	1.57	2.06***	1.36***	0.91***

[a]Contrasts between intact family group and each of the other four family structure types tested for significance, * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Table 3

Demographic Characteristics of Students Who Have No Problems, Behavioral Problems, Emotional Problems, or Both

	No Problems	Behavioral[a] Problems Only	Emotional[a] Problems Only	Both[a]
% Girls	51.9	24.9***	47.2	29.4***
% Blacks	9.8	16.7***	8.1	9.3
% Hispanics	8.0	10.9*	9.2	7.7
% Young Mothers	12.9	19.7***	11.9	17.3
% Above-Average Social Class	49.3	36.6***	35.8***	43.2
# of Siblings	1.55	1.76***	1.35**	1.52

[a]Contrasts between no problems and each of the three problem types tested for significance, * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Table 4

Multinomial Logit Model Predicting Whether Students Have No Problems, Behavioral Problems, Emotional Problems, or Both

	Behavioral[a] Problems Only	Emotional[a] Problems Only	Both[a]
Independent Variables			
Family Structure			
Mother/Step-Father Family	.8406[b]***	1.0814***	1.2379***
	(.1369)[c]	(.1771)	(.2668)
Father/Step-Mother Family	1.0928***	1.4420***	1.9683***
	(.2280)	(.2709)	(.3402)
Single-Mother Family	.5898***	1.2091***	1.1629***
	(.1397)	(.1591)	(.2674)
Single-Father Family	1.1977***	1.3652***	1.8991***
	(.2917)	(.3595)	(.5718)
Control Variables			
Girls	-1.2325***	-.2312	-.9694***
	(.110)	(.1236)	(.2155)
Blacks	.4305**	-.6467**	-.2382
	(.1435)	(.2456)	(.3577)
Hispanics	.2649	.0151	.0485
	(.1653)	(.2016)	(.3903)
Young Mother	.3529**	-.1448	.3653
	(.1252)	(.1883)	(.2651)
Above-Average Social Class	-.3391**	-.4521***	.0153
	(.1061)	(.1342)	(.2026)
# of Siblings	.2547	.2315	.5698*
	(.1553)	(.2072)	(.2351)
Constant	-3.2560	-4.0475	-4.9802
GOODNESS OF FIT	G^2=285.36 (p=.719)		
	X^2=364.81 (p=.006)		
	df=300		

* p≤.05
** p≤.01
*** p≤.001

[a] Compared to no problems.
[b] Change in log-odds.
[c] Standard error.

Table 5

Multinomial Logit Model, With Interactions, Predicting Whether Students Have No Problems, Behavioral Problems, Emotional Problems, or Both

	Behavioral[a] Problem Only	Emotional[a] Problems Only	Both[a]
Independent Variables			
Family Structure			
Mother/Step-Father Family	1.0029[b]***	1.0701***	.9520*
	(.1479)[c]	(.1788)	(.3775)
Father/Step-Mother Family	1.2568***	1.4661***	2.2059***
	(.2569)	(.2718)	(.3608)
Single-Mother Family	.7003***	1.1995***	1.2663***
	(.1556)	(.1596)	(.2868)
Single-Father Family	1.5425***	1.3180***	1.9819**
	(.3031)	(.3775)	(.6047)
Control Variables			
Girls	-.8947***	-.1643	-.8091**
	(.1629)	(.1945)	(.2964)
Blacks	.4282**	-.6463**	-.2894
	(.1439)	(.2462)	(.3584)
Hispanics	.2681	.0235	.0010
	(.1654)	(.2160)	(.3902)
Young Mother	.3420**	-.1472	.3387
	(.1257)	(.1886)	(.2657)
Above-Average Social Class	-.3345**	-.4609***	-.0294
	(.1058)	(.1346)	(.2011)
# of Siblings	.2653	.1894	.4874*
	(.1578)	(.2126)	(.2382)
Interactions			
Girls X Mother/Stepfather Fam.	.7907**	.2813	-1.0562
	(.3000)	(.3536)	(.7374)
Girls X Father/Stepmother Fam.	.6618	.4395	1.6453*
	(.5009)	(.5297)	(.6707)
Girls X Single-Mother Family	.4047	-.0721	.6504
	(.2833)	(.3023)	(.5570)
Girls X Single-Father Family	1.3752*	-.0936	.7676
	(.5470)	(.7420)	(1.1297)

Constant	-3.2149	-3.9940	-4.9359

GOODNESS OF FIT	G^2=259.09 (p=.889) X^2=300.87 (p=.289)

df=288

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* p≤.05
** p≤.01
*** p≤.001

[a] Compared to no problems.
[b] Change in log-odds.
[c] Standard error.

Table 6

Log-Odds Coefficients, Separately by Gender, for Family Structure on the Probability of Behavior Problems, Emotional Problems, or Both
(From Table 5)

	Behavioral[a] Problems Only		Emotional[a] Problems Only		Both[a]	
	Boys	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**
Mom/Stepdad Family	1.0029	1.7936*	1.0701	1.3514	.9520	-.1006
Dad/Stepmom Family	1.2568	1.9186	1.4661	1.9056	2.2059	3.8512*
Single Mother	.7003	1.1050	1.1995	1.1274	1.2663	1.9167
Single Father	1.5425	2.9177*	1.3180	1.2244	1.9819	2.7495

[a]Compared to group with no problems.

*Difference between coefficient for males and females is statistically significant at $p \leq .05$.