



Published in final edited form as:

*J Fam Psychol.* 2006 June ; 20(2): 292–301. doi:10.1037/0893-3200.20.2.292.

## Trajectories of Internalizing, Externalizing, and Grades for Children Who Have and Have Not Experienced Their Parents' Divorce or Separation

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### Abstract

This study examined whether the occurrence and timing of parental separation or divorce was related to trajectories of academic grades and mother- and teacher-reported internalizing and externalizing problems. The authors used hierarchical linear models to estimate trajectories for children who did and did not experience their parents' divorce or separation in kindergarten through 10th grade ( $N = 194$ ). A novel approach to analyzing the timing of divorce/separation was adopted, and trajectories were estimated from 1 year prior to the divorce/separation to 3 years after the event. Results suggest that early parental divorce/separation is more negatively related to trajectories of internalizing and externalizing problems than is later divorce/separation, whereas later divorce/separation is more negatively related to grades. One implication of these findings is that children may benefit most from interventions focused on preventing internalizing and externalizing problems, whereas adolescents may benefit most from interventions focused on promoting academic achievement.

### Keywords

divorce; family structure; child adjustment; developmental trajectories; behavior problems

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Parents, clinicians, and policy makers alike are concerned about how experiencing divorce affects children's adjustment. Although the research literature includes sometimes contradictory findings regarding whether and how divorce affects children's adjustment, there is some consensus that children whose parents divorce are at higher risk for a variety of negative

developmental outcomes than are children whose parents do not divorce (for review, see Amato, 2001; Amato & Keith, 1991; Cherlin, 1999).

In the literature, there have been two main ways of approaching the examination of children's well-being in relation to parental divorce. The first approach, using either cross-sectional or longitudinal data, has been to examine children's well-being at discrete points in time (e.g., Emery, Waldron, Kitzmann, & Aaron, 1999; Zill, Morrison, & Coiro, 1993). The second approach, which requires several waves of longitudinal data, has been to examine trajectories of well-being over time (Cherlin, Chase-Lansdale, & McRae, 1998; Malone et al., 2004). The first approach has been much more common, even when longitudinal data are available. To adopt the second approach, it is necessary to have data on children's adjustment measured consistently at multiple points in time.

There are several reasons to believe that the timing of divorce will be systematically associated with individual differences in children's trajectories of adjustment (e.g., Hetherington & Clingempeel, 1992). Conceptually, it may be that the farther along a given trajectory one is when the divorce occurs, the less likely it will be that the divorce will deflect the path of the trajectory. In addition, it may be that the more involved one is in contexts outside the family (e.g., peers, extracurricular activities), the less likely it will be that the divorce will have long-term effects on the trajectory (see Allison & Furstenberg, 1989). Both of these arguments would suggest that divorce will have larger effects on adjustment trajectories for younger than older children. On the other hand, it is also possible that the timing of divorce affects trajectories of different aspects of adjustment in different ways, and youth who experience their parents' divorce during adolescence may be more affected in domains that are particularly salient during adolescence (e.g., academic achievement, increasing independence, emerging romantic relationships; Hetherington, 1993). Studies that have not examined trajectories of adjustment have shown mixed results with respect to how the timing of divorce affects children's adjustment (see Hetherington, Bridges, & Insabella, 1998).

Examining developmental trajectories of adjustment has several advantages over examining adjustment at discrete points in time. Examining trajectories makes it possible to track change over time from before the divorce occurs to some period after the divorce. Including predivorce adjustment in these models is important because of evidence that children whose parents eventually divorce show poorer adjustment prior to the divorce than do children whose parents do not divorce (e.g., Cherlin et al., 1998; Elliott & Richards, 1991). Although one can control for prior adjustment in analyses predicting subsequent adjustment at a discrete point in time, such analyses do not allow for an examination of how these effects continue to develop over time. In addition to including predivorce adjustment, it is also important to include measures of adjustment not just immediately after the divorce but also measures collected after an initial transitional period because of evidence that children may show heightened adjustment problems immediately after their parents' divorce that decrease at some point after the divorce (Chase-Lansdale & Hetherington, 1990). Overall, examining trajectories rather than discrete outcomes considers effects of divorce in the context of children's rates of change and rates of acceleration in addition to their level of adjustment problems.

The availability of longitudinal data has made it possible for some studies to examine trajectories of externalizing behaviors, internalizing behaviors, and academic achievement. Cherlin et al. (1998) used growth curve models for a large sample born in 1958 in England, Scotland, and Wales to examine emotional problems in relation to parents' divorce for individuals who were 7 to 10, 11 to 15, 16 to 22, or 23 to 33 years at the time of the divorce. Their findings suggested that individuals whose parents eventually divorced had more emotional problems (using a composite measure that included internalizing and externalizing problems) prior to the divorce than did individuals whose parents did not divorce but also that

divorce itself contributed to higher levels of emotional problems into adulthood. Using the same data set, Elliott and Richards (1991) conducted analyses of variance to compare the adjustment of children whose parents had not divorced, whose parents divorced when the child was between the ages of 7 and 10 years, and whose parents divorced when the child was between the ages of 11 and 15 years; they found that children whose parents divorced had more unhappy and worried behavior, more disruptive behavior, and worse reading and mathematics scores both before and after their parents' divorce. The time intervals between waves of data collection were longer in these studies than in the present study, so for some children, data were collected in close temporal proximity to the occurrence of the divorce, whereas for other children, data were collected years before or years after the divorce, which may obscure effects of the timing of the divorce.

Using the sample to be considered in the present report, Malone et al. (2004) found using latent change score models that girls' teacher-rated externalizing behavior problem trajectories were not affected by experiencing their parents' divorce, regardless of the timing of the divorce. In contrast, boys who were in elementary school when their parents divorced showed an increase in externalizing behavior problems in the year of the divorce; this increase persisted in the years after the divorce. Boys who were in middle school when their parents divorced showed an increase in externalizing behavior problems in the year of the divorce followed by a decrease to below baseline levels in the year after the divorce; this decrease persisted in the following years.

The present study extends the Malone et al. (2004) work in several ways. First, the main purpose of Malone et al. was to demonstrate how latent change score models could be applied to life events data; that paper's key contributions were methodological and analytical, using a substantive area of inquiry to illustrate the analytic points. In contrast, although we have adopted a novel analytic technique in the present paper as well, our primary focus was on substantive findings regarding how experiencing parental divorce affects developmental trajectories of adjustment. Second, the outcomes examined in Malone et al. were restricted to teacher-reported externalizing behaviors. For the present study, we included teacher-reported internalizing behaviors, mother-reported externalizing and internalizing behaviors, and academic grades as well as teacher-reported externalizing behaviors. Third, Malone et al. included all 356 children from the larger study whose biological parents were married when the children were in kindergarten at Wave 1 of the study. The present paper employed a procedure of carefully matching by gender, ethnicity, and socioeconomic status (SES) in a group of children whose parents divorced with a group of children whose parents did not divorce ( $n = 97$  in each of the two groups). The matching procedure enabled us to analyze the data in a way that helps disentangle effects of age at the time of the divorce from effects of current age.

In his recent metaanalysis, Amato (2001) concluded in relation to effects of children's age that "it is difficult to interpret these results substantively because the data reflect children's ages at the time of data collection rather than children's ages at the time of parental separation. Data on the latter variable were not available in most studies" (p. 362). That is, most studies assess well-being in, for example, a group of preschoolers or adolescents and compare the well-being of those preschoolers and adolescents whose parents have or have not divorced. The implication of this strategy is that well-being is assessed in close temporal proximity to the time of the divorce for some children but years after the divorce for others. The present study adopts a different approach to the timing of divorce to address this issue. Specifically, we take the time of the parents' divorce as the anchor point and examine trajectories of adjustment that extend from 1 year prior to this anchor point to 3 years after this anchor point. This has the advantage of making possible a comparison of children who are at comparable temporal points in relation to their parents' divorce. Furthermore, we have constructed a matched group of children whose

parents did not divorce to compare with the sample whose parents did divorce. This strategy will enable us to test whether timing of divorce is systematically associated with individual differences in children's trajectories of adjustment.

## Method

### Participants

The families in the current investigation were participants in the Child Development Project, an ongoing, multisite longitudinal study of child development (see Dodge, Bates, & Pettit, 1990). Participants were recruited when the children entered kindergarten in 1987 or 1988 at three sites: Knoxville and Nashville, TN and Bloomington, IN. Parents were approached at random during kindergarten preregistration and asked if they would participate in a longitudinal study of child development. About 15% of children at the targeted schools did not preregister; correspondingly, 15% of the sample was recruited from among these children on the 1st day of school or by letter or telephone. Of those asked, approximately 75% agreed to participate.

The sample consisted of 585 families at the first assessment, but in the present study, we limited the potential sample to the 356 children whose biological parents were married to one another at this initial prekindergarten assessment. Ninety-seven of the 356 children in the target sample experienced at least one divorce during the study timeframe. The number of children who experienced the first divorce or separation in kindergarten through Grade 10, respectively, was 15, 12, 12, 10, 10, 9, 8, 8, 3, 2, and 8. The year of divorce was used as anchor point for these children; that is, the trajectory baselines were estimated from the year prior to the first divorce; which year that was varied by child. Each child in the divorced group was matched on gender, race, and SES with a child in the nondivorced group as a way of controlling for the effects these demographic variables may have on trajectories of adjustment (see Duncan & Brooks-Gunn, 1997; Maccoby, 1998). For example, because 12 children's parents divorced while the children were in Grade 1, 12 children in the divorced and 12 children in the nondivorced group have Grade 1 scores as the anchor point of their trajectories. After the matching, the divorced and comparison samples did not differ significantly in ethnicity (divorced, 15% African American; nondivorced, 13% African American),  $\chi^2(1, N = 194) < 1, ns$ ; gender (divorced, 52% male; nondivorced, 52% male),  $\chi^2(1, N = 194) < 1, ns$ , or kindergarten SES (divorced,  $M = 38.8, SD = 10.6$ ; nondivorced,  $M = 39.6, SD = 10.8$ ),  $t(191) < 1, ns$ . As a result of the matching procedure and the construction of the variables anchored to the year of divorce (or the comparable year for the matched sample that did not experience parental divorce), analyses reflected data collected at comparable points in time in relation to the occurrence of the divorce, regardless of the age of the child at the time of the divorce (e.g., 1 year prior to the divorce for the predivorce data so that year of divorce, year of data collection, and age at time of divorce were not confounded).

### Procedures and Measures

**Divorce or separation**—During the summer before children started kindergarten or within the first weeks of school, in-depth interviews were conducted with mothers in their homes. Information provided in these interviews was used to select the subset of children whose biological parents were married to one another when the child began kindergarten. In each subsequent year, mothers were asked whether they had divorced or separated from their spouse in the last 12 months. Consistent with most empirical studies (e.g., Cherlin et al., 1991; Zill et al., 1993), parental divorce and separation were not distinguished. The large majority of marital separations end in divorce within 3 years, and it has been argued that in terms of child adjustment, the critical point in time is the parents' marital separation, whether or not this is accomplished through legal divorce (Bramlett & Mosher, 2002). For the purposes of this study, we categorized parents as divorced/separated or not (0 = no, 1 = yes). For the purposes of

analyses, if mothers reported experiencing a divorce or separation in multiple years, we considered only the first divorce/separation reported because this event represented the dissolution of the children's biological parents' marriage.

**Externalizing and internalizing behaviors**—Children's teachers in kindergarten through Grade 8 completed the 113-item Teacher Report Form of the Child Behavior Checklist (Achenbach, 1991). Teachers reported whether each item was not true (0), somewhat or sometimes true (1), or very or often true (2) of the child. The 34 items in the externalizing behavior scale (e.g., whether the child gets in fights and is disobedient at school) were summed to create a measure of externalizing behavior problems in each year; the 35 items in the internalizing behavior scale (e.g., whether the child cries a lot and is too fearful or anxious) were summed to create a measure of internalizing behavior problems in each year. Because most children had multiple teachers after elementary school, school personnel (usually the principal or school secretary) were asked to nominate the teacher most familiar with the child (usually the physical education, language arts, or homeroom teacher) to complete this measure.

Children's mothers completed the Child Behavior Checklist (Achenbach, 1991) when children were in kindergarten through Grade 11. As with the teacher-report version, separate scales were created to reflect externalizing and internalizing behaviors in each year. For both teacher- and mother-reported behavior problems, the scores used in analyses were log-transformed raw scores. Standardized scores, such as the *t* scores calculated in the scoring protocols, are not appropriate for growth trajectory analyses. The log transformation reduced the positive skew present in the raw scores.

**Grades in school**—Children's grades (1 = “F,” 13 = “A,” with intermediate values representing F+, D-, D, D+, etc.) in mathematics and language arts were obtained, with parental permission, from official school records at the end of Grades 1 through 11. Grades in these two subject areas were moderately correlated ( $r = .60-.70$ ) and were combined to provide an average grade in each year.

## Results

For each outcome measure, a separate HLM with random intercept, slope, and quadratic terms was estimated using PROC MIXED in SAS version 8.2 (SAS Institute, 2001). The dependent variables were taken at five timepoints: each year from 1 year prior to the divorce to 3 years after. This “random coefficients” model estimates three terms that characterize a best fit curve to the five observed data points for each student. Results of the fitted model include means of each trajectory parameter across students, and variances of those parameters. Variances in the quadratic terms were inestimable for the teacher measures; such results are not uncommon in more complex growth models with smaller numbers of observations per student. The random quadratic components were omitted from further analyses for those measures; the fixed quadratic components were retained (i.e., for those outcome measures, a mean quadratic term representing curvature was still estimated, but the degree of curvature did not vary across child). Degrees of freedom for tests of effects and contrasts were calculated using the between/within method. In this method, total degrees of freedom are based on the number of observations in the analysis, that is, for each timepoint (these vary across outcomes due to differential missing data rates). After considering the model effects, the residual degrees of freedom are divided into two pools, for between and within-person effects. The degrees of freedom for between-person effects are based on the sample size of students; the degrees of freedom for within-person effects are those remaining.

The trajectories were then predicted from divorce timing (0 = no divorce, 1 = divorce in period of kindergarten through Grade 5, 2 = divorce in period of Grades 6–10, per Malone et al.,

2004), child gender, and their interactions, controlling for kindergarten SES, ethnicity (African American vs. non-African American), and grade at the time of divorce (a proxy for age). This division into early and late divorce was adopted to allow some moderation of the effects of divorce by timing in the child's life while preserving a reasonable segment of the sample to estimate the parameters in each segment. Malone et al. selected the Grade 5/6 division because the large majority of students in the sample moved from elementary to middle school at that point, resulting in a convenient breakpoint reflecting an important life transition.

First, divorce timing  $\times$  gender interaction terms were tested; none was significant, so these interaction terms were omitted from subsequent analyses. Next, the divorce timing effect was tested. If the timing effect was significant, two further orthogonal contrasts tested differences between the no divorce group and the two other groups taken together and between the early divorce and late divorce groups. These contrasts were tested on all three (or two, for teacher reports) trajectory parameters simultaneously, so that the test was the overall effect of divorce timing on the entire trajectory. Effects of the divorce timing variable on the trajectories were tested by likelihood ratio comparisons of nested models. Specific contrasts, between ever and never experiencing divorce and between experiencing divorce early and late, were tested by *F* ratios for the hypothesized constraints. Finally, after evaluation of the planned comparisons, we tested the specific contrasts between the no divorce group and each of the early and late divorce groups separately.

As shown in Table 1, three of the five outcomes showed a significant effect of divorce timing: mother-reported internalizing problems, teacher-reported externalizing problems, and academic grades. In addition, the contrasts were significant for the never versus early divorce groups on all outcomes except grades; the contrast was significant for the never versus late divorce groups for grades only.

Trajectories for mother-reported internalizing problems appear in Figure 1, adjusted for age at time of divorce and the other control variables. Early divorce showed a pattern of problems peaking 1 year postdivorce; late divorce showed no substantial effect. By 3 years postdivorce, divorce timing still showed a significant overall impact,  $F(2, 173) = 4.24, p = .016$ . The analysis of teacher-reported internalizing problems yielded a significant contrast between the never and early divorce groups (see Table 1). As shown in Figure 2, for the early divorce group, teacher-reported internalizing increased over time from the year before the divorce to 3 years after the divorce, whereas teacher-reported internalizing decreased slightly over this same period for the group that did not experience parental divorce.

Similarly, the analysis of mother-reported externalizing problems showed a significant contrast between the never and early divorce groups (see Table 1). As shown in Figure 3, the early divorce group showed mother-reported internalizing problems that peaked in the year after divorce and declined slightly by 3 years after the divorce, but these levels remained significantly higher than those of the group that had never experienced parental divorce. The analysis of teacher-reported externalizing problems yielded a significant overall effect, with significant contrasts between early and late divorce and between never and early divorce; trajectories of teacher-reported externalizing problems appear in Figure 4. As illustrated, differences were modest in the year prior to divorce, but although students experiencing an early divorce showed elevated externalizing problems, problems for those experiencing a later divorce declined over time. The overall differences were significant 3 years postdivorce,  $F(2, 162) = 5.53, p = .005$ .

Finally, divorce showed a significant impact on academic grades; contrasts between early and later divorce and between never and later divorce were significant as well. Trajectories for grades appear in Figure 5. As shown, those who experienced a divorce showed consistently



poorer performance than those who did not. Those experiencing a late divorce showed a marked decline relative to other groups. Differences at the end of the time frame were significant,  $F(2, 148) = 7.96, p < .001$ .

## Discussion

This study found that the experience of divorce is related to trajectories of behavioral outcomes and academic grades for children, but these effects vary according to the timing of the divorce. Our results support the overall conclusion that parental divorce during elementary school is related to more adverse effects on internalizing and externalizing problems than is later divorce, whereas later divorce is related to more adverse effects on grades. Our results are similar to those found in other research suggesting that divorce and the initial transition period that follows may be particularly difficult for young children (e.g., Allison & Furstenberg, 1989). Hetherington (1989) suggests that young children may be less capable of realistically assessing the causes and consequences of divorce, may feel more anxious about abandonment, may be more likely to blame themselves, and may be less able to take advantage of outside resources.

In contrast to externalizing and internalizing problems, it appears that parental divorce is more strongly related to children's academic performance when children experience a later, rather than earlier, divorce. This may be due to the experience of family turmoil coinciding with a time when grading standards become increasingly stringent as children get older. The increased pressures that go along with both of these events may be quite overwhelming for the child. Family theorists suggest that changes in parents' behavior (e.g., declines in parental support, less monitoring) may lead to behaviors in children that are conducive to poor academic performance (Jeynes, 2002). This could account for the decline in academic achievement for children whose parents divorce when they are older.

Taken together, these results suggest that the timing of parental divorce is critical to examine and highlight the importance of assessing the developmental trajectories, including periods both before the divorce and years after the divorce, of children experiencing this major life event. The current investigation has applied sophisticated longitudinal models to the examination of the effects of divorce, incorporating information regarding the timing of divorce in a more precise way than is commonly found in extant research (e.g., Cherlin et al., 1998). In addition, our procedure of matching on gender, race, and SES the samples of children who had and had not experienced their parents' divorce contributes to confidence that differences were not attributable to demographic differences between groups.

One advantage of the analytic strategy we adopted is that it helps address the concern in many studies regarding the confound between current age and age at the time of the divorce (see Emery, 1999). The variables that we analyzed were created to reflect internalizing, externalizing, and academic grades in relation to the age at the time of the divorce. If it were just the case that children whose parents divorce, regardless of the timing, experience a decline in academic grades when they are in Grades 6 to 10, then we would not expect to find differences between the early and late divorce group in our sample because of the way our postdivorce measures were constructed; that is, we had measures of adjustment for the early divorce group that extended into Grades 6 to 10. Thus, by centering the adjustment variables on the time of divorce, rather than the child's current age, the analysis strategy is able to address some concerns regarding confounding of current age and age at time of divorce.

Although there are many strengths to the present study, this investigation is not without limitations. First, our sample is somewhat limited in size and in diversity; more research is needed to determine the influence of divorce on minority youth, and future studies should include a more diverse sample enabling the results to be applied to a broader population. In

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addition, for the purposes of our analyses, if mothers reported undergoing multiple divorce/separations, we considered only the first divorce reported because this divorce/separation represented the dissolution of the child's biological parents' marriage. Furthermore, the present study began following children when they were approximately 5 years old and living with two biological parents; thus, the data cannot inform our understanding of how experiencing their parents' divorce before the age of 5 affects children's developmental trajectories. At the other end of the time spectrum, we also did not include information about custody arrangements, household composition, or remarriages after the parents' divorce; it is likely that such structural features and additional experiences are important to understanding children's adjustment after divorce. In the present study, differences in the group trajectories may have reflected changes associated with parental remarriage as well as parental divorce. For example, children who enter a stepfamily tend to have an increase in behavior problems, at least during the years just after remarriage (e.g., Hetherington et al., 1998). Although many previous studies have included samples that have experienced multiple marital transitions and that have experienced their parents' divorce/separation prior to the age of 5 years (e.g., Bray & Berger, 1993; Hetherington, Cox, & Cox, 1985), focusing on developmental trajectories has been much less common, even in studies with longitudinal data. Future studies that include children who experienced multiple divorce/separations, who experienced their parents' divorce prior to age 5, or who lived in different family configurations after the divorce might also examine effects within the realm of developmental trajectory models as we have done to obtain a more complete picture of how these transitions relate to children's adjustment.

An alternative way of explaining our findings is that the differences we attributed to the child's age at the time of the divorce were actually due to historical cohort effects (see Amato, 2001). However, we believe this possibility to be less plausible than the interpretation of the findings in terms of age because the timing effects were different across dependent variables. If all of the findings had shown that early divorce was more strongly related to negative effects than was later divorce, one could argue more convincingly that perhaps a cohort effect was responsible if, for example, divorce was becoming more normative and accepted over time and, therefore, associated with less deleterious consequences. It is more difficult to construe an argument in which cohort effects would operate differently on internalizing and externalizing problems versus academic grades.

It is important to acknowledge that not all children experience similar trajectories before or after experiencing their parents' divorce. For example, Amato, Loomis, and Booth (1995) found that children's problems decrease when parents in a high-conflict marriage divorce, whereas children's problems increase when parents in a low-conflict marriage divorce. Thus, trajectories of adjustment that may be typical of most children may not be exhibited by an individual child. Furthermore, different children may manifest adjustment problems in different ways. A direction for future research will be to investigate whether, for example, those children whose grades are dropping are the same children whose internalizing or externalizing problems are increasing.

Findings from the present study suggest specific aspects of adjustment that could be targeted in future interventions, depending on the age of the child. In the past, interventions designed to help children experiencing their parents' divorce have typically shown only small effect sizes (Lee, Picard, & Blain, 1994). Perhaps one reason that these interventions have not had larger effects is that they have not targeted key outcomes relevant at particular points in development. For example, youth in the present study who experienced their parents' divorce in middle school or high school were vulnerable to lower grades in school, suggesting that a useful intervention for such youth would focus on academic mentoring or tutoring to try to prevent adolescents' grades from worsening. School-based groups that meet on a few occasions to help the child cope with changes associated with the divorce, which have been common forms of intervention



(see Hetherington & Stanley-Hagan, 1999), may be more effective if they target particular areas of risk associated with the child's age. Interventions designed for parents could incorporate information about how children of different ages may respond to experiencing divorce and provide parents with tools for helping their children cope with age-specific concerns.

This study adds to a growing literature on the effects of divorce but goes beyond extant literature in several important ways. The present study was in a unique position that allowed us to examine longitudinal data both before and after the divorce as well as to compare groups of children who experienced their parents' divorce in elementary school, those who experienced the divorce in the later school years, and those children who did not experience a parental divorce. We believe that examining these groups based on their developmental trajectories is critical for beginning to understand the overall effects of marital dissolution on the adjustment of children.

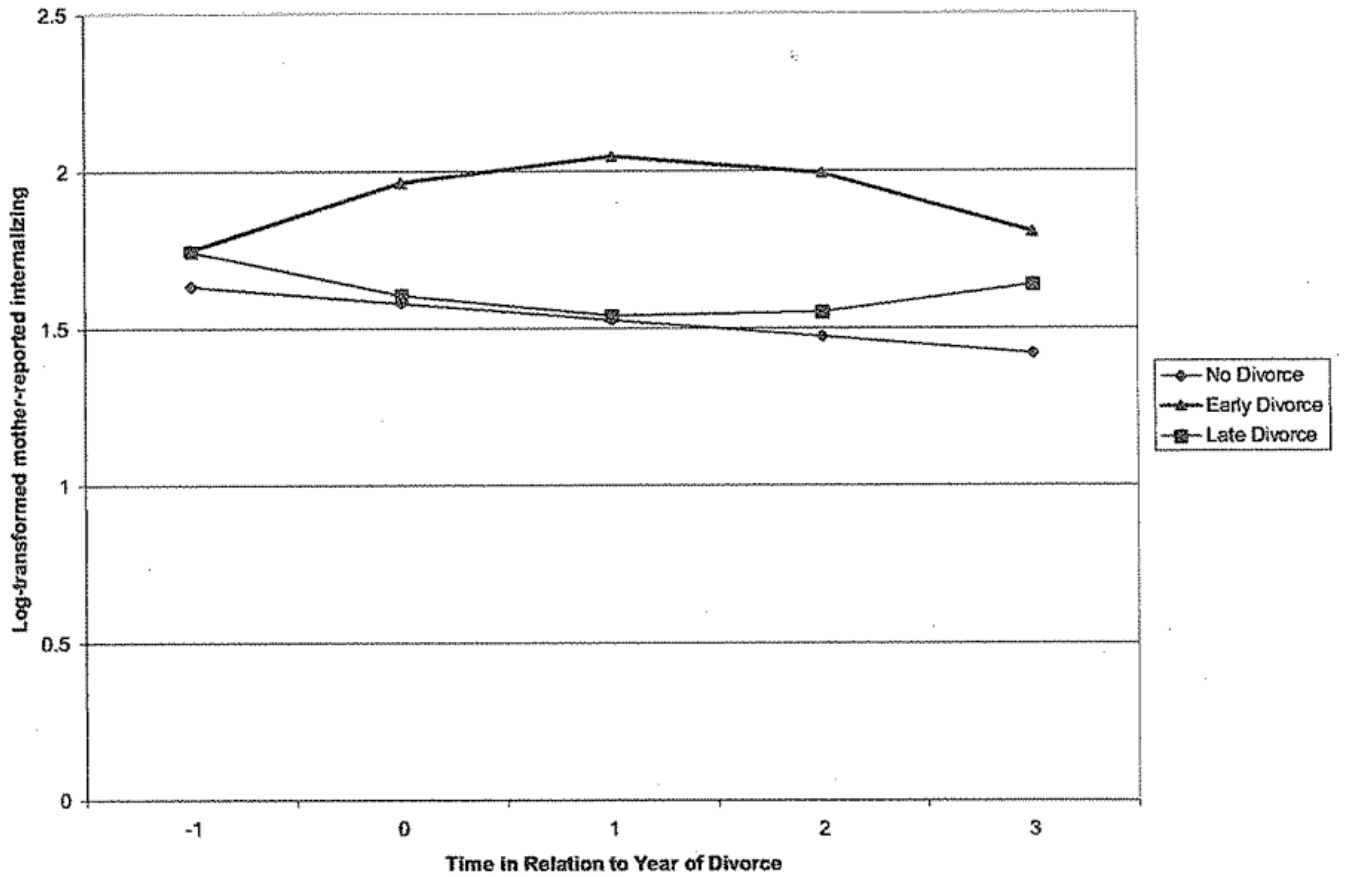
## Acknowledgments

The Child Development Project was supported by Grants MH42498, MH56961, MH57024, and MH57095 from the National Institute of Mental Health and HD30572 from the National Institute of Child Health and Human Development, and support for the present study was provided by a generous anonymous donation to the Center for Child and Family Policy at Duke University. We thank the parents, children, and teachers who participated in this research.

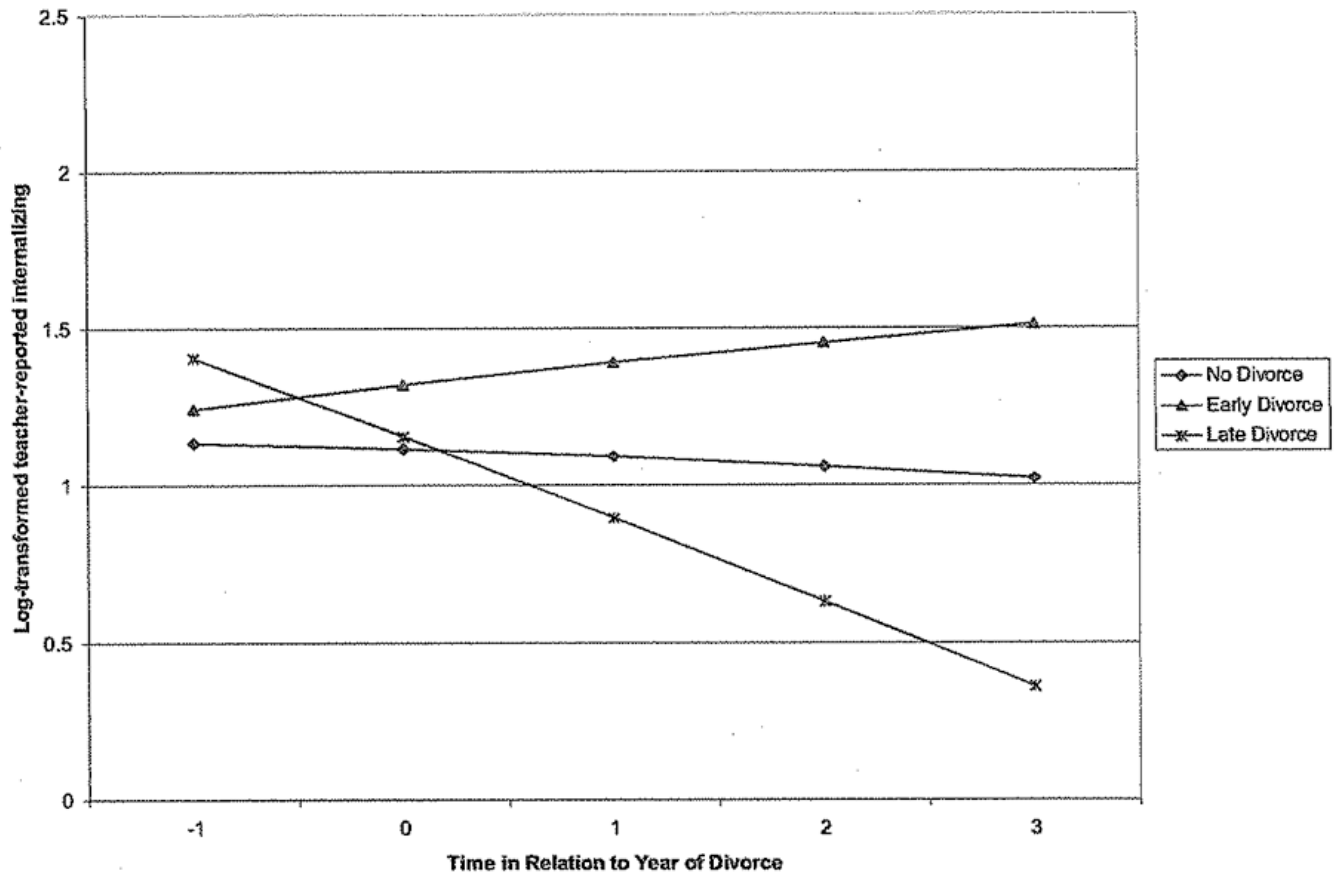
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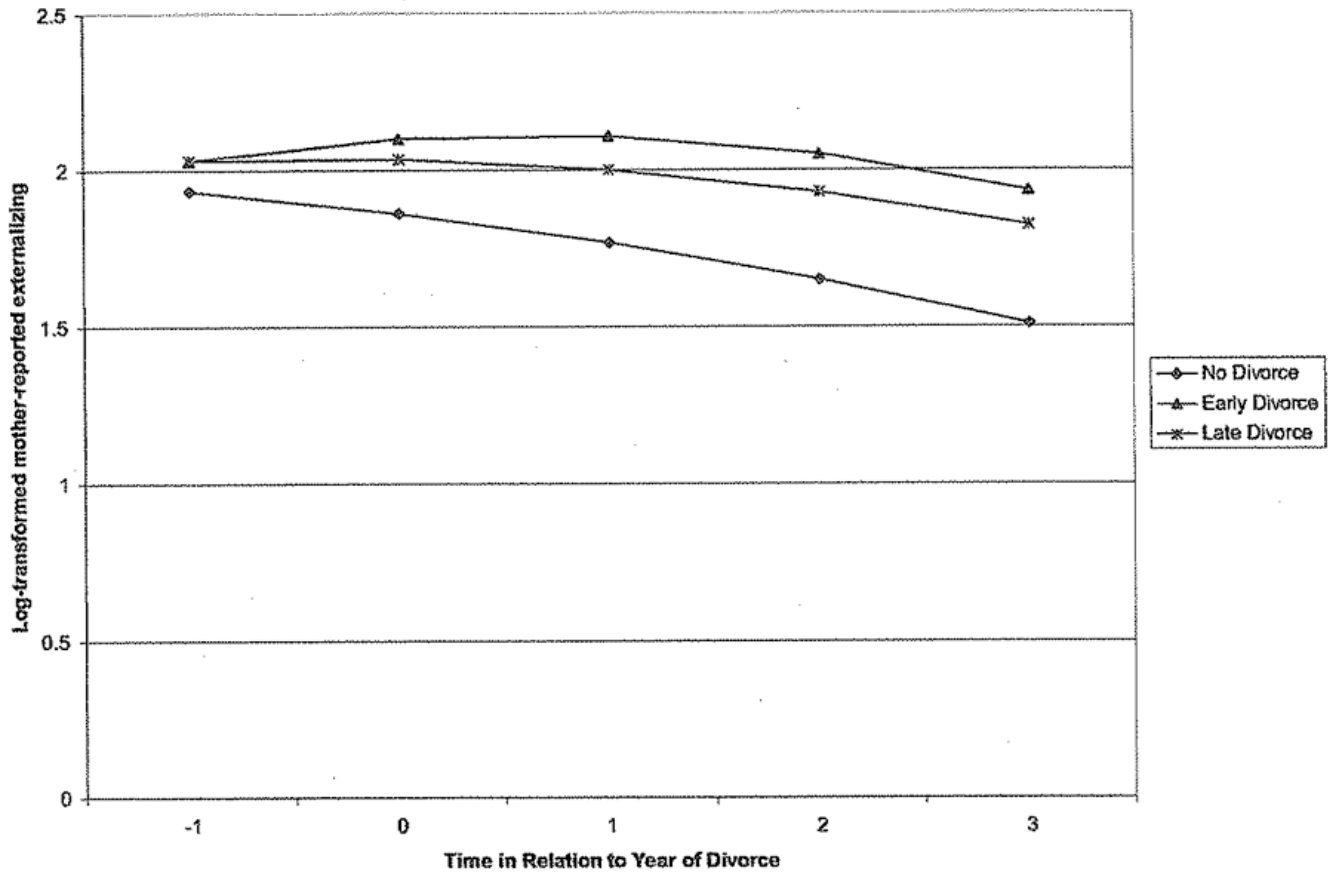
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**Figure 1.**  
Trajectories for mother-reported internalizing problems, controlling for gender, race, and SES.

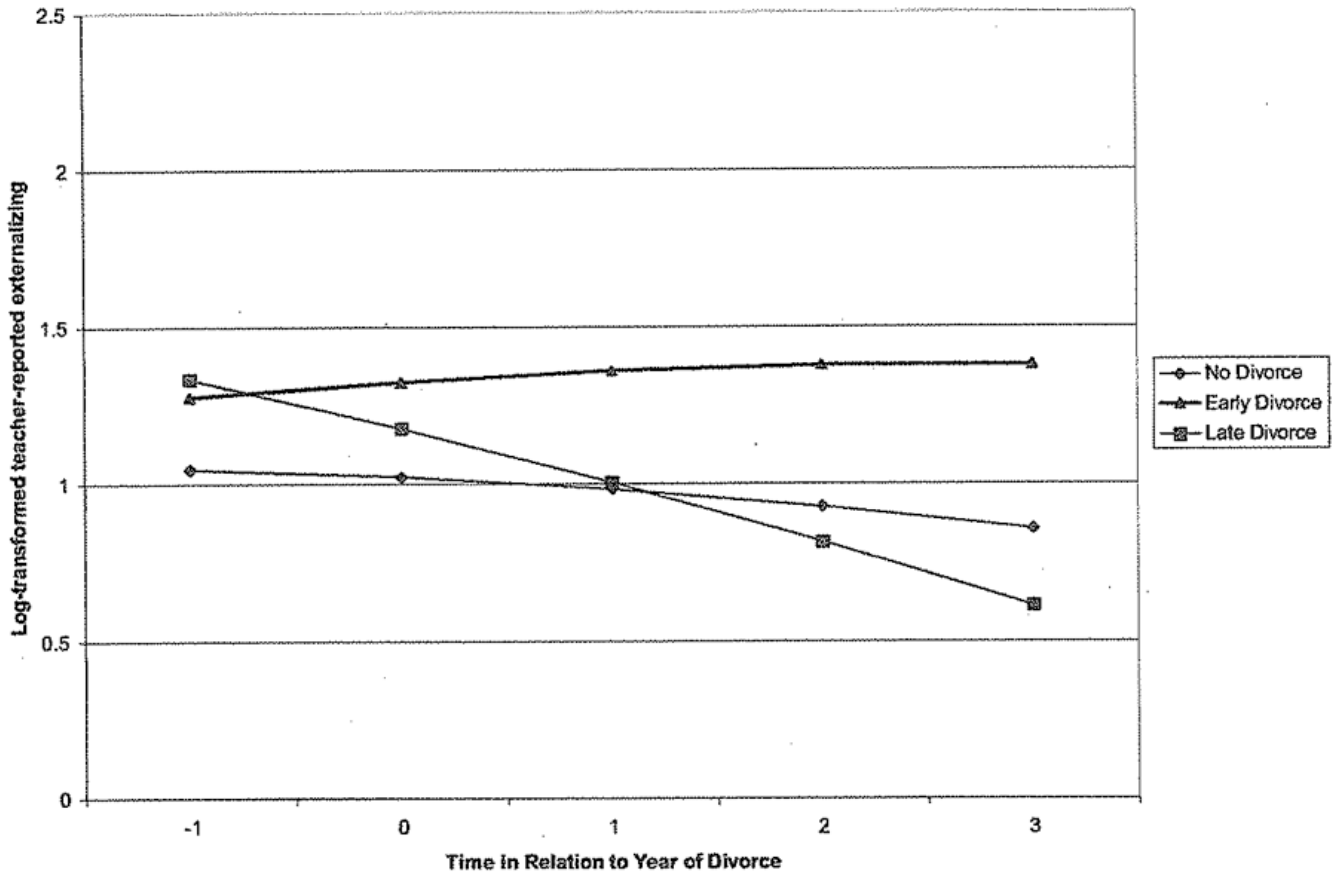


**Figure 2.** Trajectories for teacher-reported internalizing problems, controlling for gender, race, and SES.

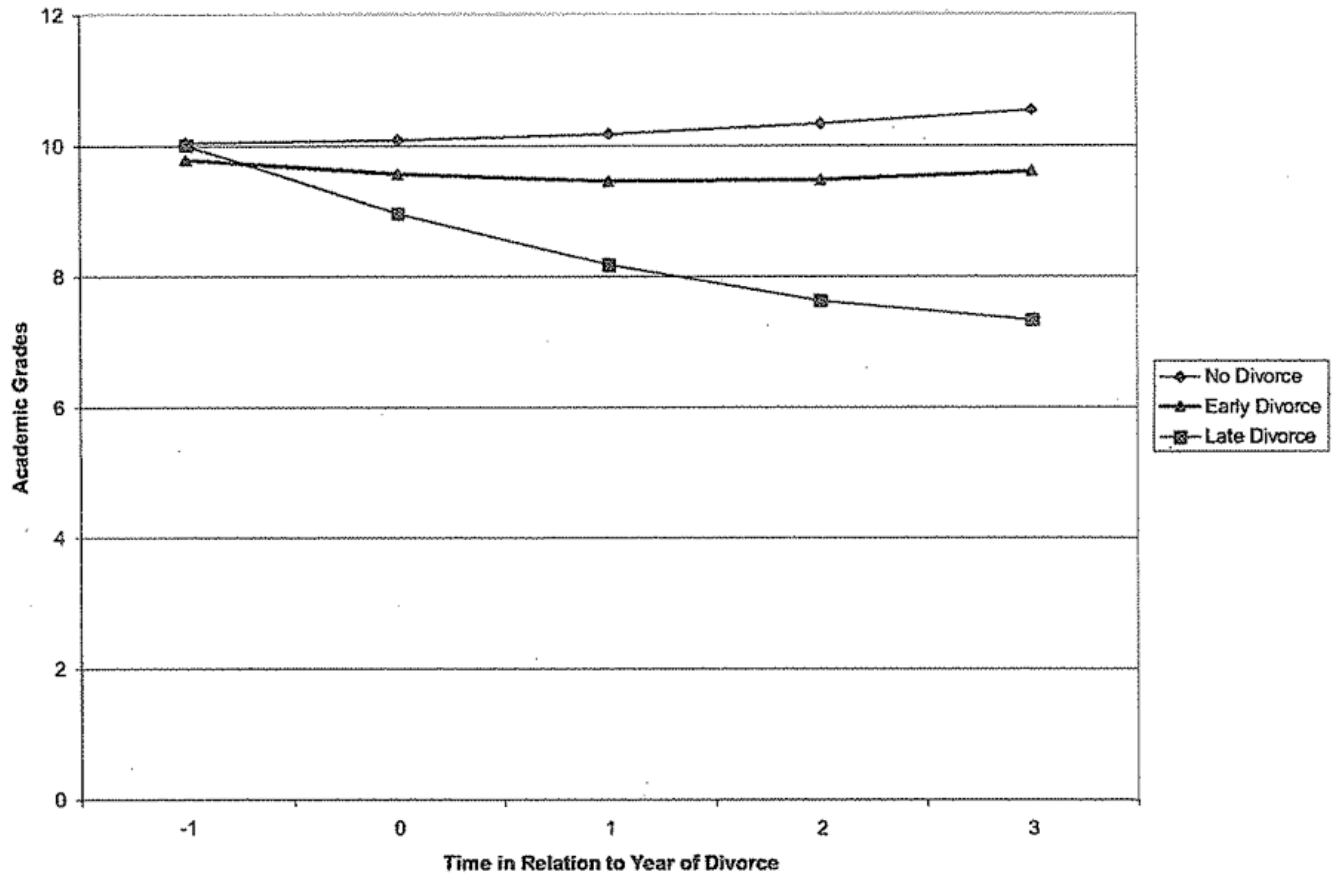


**Figure 3.** Trajectories for mother-reported externalizing problems, controlling for gender, race, and SES.





**Figure 4.** Trajectories for teacher-reported externalizing problems, controlling for gender, race, and SES.



**Figure 5.**  
Trajectories for academic grades, controlling for gender, race, and SES.

**Table 1**  
**Prediction of Trajectories from Divorce Timing and Gender**

Effects	Internalizing problems (mother)	Internalizing problems (teacher)	Externalizing problems (mother)	Externalizing problems (teacher)	Grades
Gender × divorce	$\chi^2(6) = 3.6$	$\chi^2(4) = 8.7$	$\chi^2(6) = 5.8$	$\chi^2(4) = 3.7$	$\chi^2(6) = 10.6$
Divorce timing	$\chi^2(6) = 18.4^{***}$	$\chi^2(4) = 8.7$	$\chi^2(6) = 10.9$	$\chi^2(4) = 11.8^*$	$\chi^2(6) = 17.8^{***}$
Ever vs. never	$F(3, 523) = 1.10$	$F(2, 491) = 1.16$	$F(3, 523) = 2.55$	$F(2, 491) < 1$	$F(3, 466) = 5.33^{**}$
Early vs. late	$F(3, 523) = 2.97^*$	$F(2, 491) < 1$	$F(3, 523) < 1$	$F(2, 491) = 3.48^*$	$F(3, 466) = 3.02$
Never vs. early <sup>a</sup>	$F(3, 523) = 5.93^{***}$	$F(2, 491) = 4.50^*$	$F(3, 523) = 3.52^*$	$F(2, 491) = 3.87^*$	$F(3, 466) < 1$
Never vs. late <sup>a</sup>	$F(3, 523) < 1$	$F(2, 491) < 1$	$F(3, 523) < 1$	$F(2, 491) = 1.62$	$F(3, 466) = 5.81^{***}$

<sup>a</sup>Post hoc comparisons, unadjusted.

\*  $p < .05$ .

\*\*  $p < .01$ .