

Parental Divorce and the Well-Being of Children: A Meta-Analysis

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This meta-analysis involved 92 studies that compared children living in divorced single-parent families with children living in continuously intact families on measures of well-being. Children of divorce scored lower than children in intact families across a variety of outcomes, with the median effect size being .14 of a standard deviation. For some outcomes, methodologically sophisticated studies yielded weaker effect sizes than did other studies. In addition, for some outcomes, more recent studies yielded weaker effect sizes than did studies carried out during earlier decades. Some support was found for theoretical perspectives emphasizing parental absence and economic disadvantage, but the most consistent support was found for a family conflict perspective.

The number of children affected by divorce has increased dramatically since the 1950s. Currently, every year more than 1 million children in the United States experience the divorce of their parents (U.S. Bureau of the Census, 1989, p. 87). Projections indicate that 38% of White children and 75% of Black children born to married parents will experience parental divorce before they reach the age of 16 (Bumpass, 1984). The large number of children affected by marital disruption has generated both public and scientific concern over the consequences of divorce for children's development and well-being.

Numerous studies have examined the implications of parental divorce for children's scholastic achievement, conduct, psychological adjustment, self-esteem, social competence, and relationships with parents. Many studies have found that children from divorced families experience lower levels of well-being across these domains than do children from intact families. However, a good deal of inconsistency exists in this literature, and many studies have failed to find significant differences. In addition, studies have varied substantially both in their methodologies and in the characteristics, such as age level and social class, of the children studied.

This literature has been reviewed in a qualitative fashion by Blechman (1982), Emery (1982), Goetting (1981), Hetherington (1979), Kurdek (1981, 1983), and Longfellow (1979), and more recently by Demo and Acock (1988), Edwards (1987), Emery (1988), Hetherington and Camara (1984, 1988), and Krantz (1988). Given the often contradictory nature of much of this research, it is not surprising that reviewers have sometimes reached discrepant conclusions. For example, Edwards (1987) suggested that most children recover from divorce with few enduring negative consequences. In contrast, Krantz (1988) warned that the psychosocial adjustment of children of divorce

is at risk. The middle ground was taken by Emery (1988), who acknowledged that divorce is associated with a number of negative child outcomes but concluded that children with serious problems are not markedly overrepresented among divorced families (p. 70). Finally, Demo and Acock (1988) found an increased likelihood of certain problems for children of divorce but argued that methodological limitations make it difficult to draw firm conclusions. Overall, reviewers have reached quite different conclusions after examining similar sets of studies.

Although many qualitative reviews of this literature exist, a meta-analysis has not yet been attempted. Yet, a sufficient number of studies exists at this time to justify a quantitative review. We believe that a meta-analysis has the potential to bring some order to an otherwise confused and contradictory body of findings. Accordingly, our first purpose is to estimate the impact of parental divorce on child well-being across all available studies. This allows us to answer three questions: (a) How large are the differences between children in divorced and intact families on measures of well-being? (b) Are these pooled differences statistically significant? and (c) Are these differences larger for some outcomes than for others?

Our meta-analysis has two further purposes. The magnitude of estimated effects may vary systematically with study attributes, such as the type of analysis used and the nature of the sample. Consequently, we use meta-analytic techniques to search for study characteristics that account for variation in effect sizes. Our final purpose is to consider the cumulative evidence across all available studies for three theoretical perspectives on the effects of divorce on children. Each perspective suggests a number of hypotheses. We assess the degree of support for these hypotheses and, when possible, use meta-analytic techniques to combine data across studies for this purpose.

Theoretical Considerations

A number of explanations and intervening processes have been proposed to account for why divorce might have negative effects on children's lives (see Kalter, Kloner, Schreier, & Okla, 1989, and McLanahan, 1985, 1989, for discussions). However,

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most explanations focus on three central notions: parental absence, economic disadvantage, and family conflict.

Parental Absence Perspective

The family is the key social institution for providing the nurturant socialization of young children. Traditionally, it has been assumed that the two-parent family (with both parents living in the same household as the child) is a better environment for children's development than the single-parent family. Accordingly, the presumed negative effects of divorce are often attributed to socialization deficits that result from growing up with one parent rather than two. This notion has been criticized for emphasizing family structure at the expense of family process and for being politically conservative (Marotz-Baden, Adams, Buech, Munro, & Munro, 1979; Scanzoni, Polonko, Teachman, & Thompson, 1989). Nevertheless, this perspective is based on a straightforward principle: If parents are important resources for children's development, then, all things being equal, two parents should be better than one.

It is well known that divorce is associated with a decrease in the quantity and quality of contact between children and their noncustodial parent (Amato, 1987; Furstenburg & Nord, 1985; White, Brinkerhoff, & Booth, 1985). Also, because most custodial parents are in the labor force, they are constrained in the amount of time and energy they can devote to their children (Brandwein, Brown, & Fox, 1974). For these reasons, children of divorce often experience a decrease in parental attention, help, and supervision. This decline in parental support may increase the likelihood of problems, such as academic failure, low self-esteem, and misbehavior (Rollins & Thomas, 1979). In addition, the lack of parental models in the household may result in the inadequate learning of social skills (such as cooperating, negotiating, and compromising) necessary for success in the larger world.

A focus on parental absence leads to the following hypotheses. First, children who experience the death of a parent (or the loss of a parent for any other reason) exhibit problems similar to those of children who experience parental divorce. Second, because a stepparent can provide an alternative role model and source of support, children of divorce have fewer problems if the custodial parent remarries than if the custodial parent remains single. Third, this perspective suggests that the disruptive effects of living in a single-parent family are partly mitigated if noncustodial parents maintain close relationships with their children. This leads to the hypothesis that the frequency and quality of contact with the noncustodial parent is positively associated with children's well-being.

Economic Disadvantage Perspective

A second perspective is based on the notion of economic disadvantage. Divorce typically leads to a decline in the standard of living of mother-headed families, often pushing them below poverty level (Duncan & Hoffman, 1985; Weitzman, 1985). This perspective assumes that it is economic hardship, rather than family type as such, that is responsible for the lower well-being of children of divorce.

A lack of economic resources increases the risk of a number

of developmental problems in children. Economic hardship may negatively affect children's nutrition and health (Williams, 1990). In addition, poor single mothers are unable to afford private lessons, educational toys, books, home computers, and other goods that facilitate children's academic success. Limited means may also force families to live in neighborhoods in which school programs are poorly financed and services are inadequate (McLanahan, 1989). Furthermore, living in poverty may be stigmatizing for children and may facilitate the entry of adolescents into deviant subcultures (Voydanoff & Majka, 1988).

Because the economic disadvantage perspective holds that the problems observed in children of divorce are due primarily to the loss of income experienced by custodial mothers, it follows that few differences should be observed between children from divorced and intact families if income is controlled statistically, or if families are matched on income level. This perspective also leads to the hypothesis that the well-being of children of divorce is enhanced if custodial mothers remarry, because this usually results in improvements in financial status. (Note that this hypothesis is also predicted by the parental absence perspective.) Finally, this perspective suggests the hypothesis that children experience fewer problems if fathers rather than mothers have custody, because fathers generally earn more income than do mothers.

Family Conflict Perspective

The third perspective assumes that conflict between parents before and during the separation period is a severe stressor for children. Interparental hostility creates an aversive home environment in which children experience stress, unhappiness, and insecurity (Maccoby & Martin, 1983). Obviously, such an environment is less than optimal for the development of children. In fact, numerous studies have indicated that interparental conflict in intact marriages has a negative impact on children's psychological adjustment (see Emery, 1982, for a review). Conflict is also likely to stress parents and make them less effective in dealing with their children (Hetherington, Cox, & Cox, 1982; Wallerstein & Kelly, 1980). Other studies show that children tend to be drawn into conflict between their parents, resulting in further deteriorations in parent-child relationships (Amato, 1986; Johnston, Kline, & Tschann, 1989). According to this perspective, children of divorce exhibit problems, not because of the change in family structure, but because of the accompanying conflict.

The conflict perspective leads to the hypothesis that children in intact families with high levels of interparental conflict exhibit problems similar to those of children of divorce. Indeed, this perspective suggests that children in harmonious single-parent families may be better adjusted than children in high-conflict intact families. A second hypothesis that follows from this perspective is that the adjustment of children of divorce improves with the passage of time since marital dissolution. The assumption here is that if poor child adjustment is a reaction to marital discord, then children's functioning should recover as levels of conflict subside. Of course, in some cases, conflict between parents may continue after the divorce, particularly in relation to visitation and the payment of child support. This leads to a third hypothesis: Children's well-being is in-

versely correlated with the level of postdivorce conflict that persists between parents.

Method

Selection of Studies

Studies were located through manual searches of *Psychological Abstracts*, *Sociological Abstracts*, and the *Social Sciences Index*; computerized data bases and the reference sections of review articles were also used. Each study had to meet four criteria before it was included in the meta-analysis. First, studies had to contain a sample of children living in single-parent families formed through divorce or separation as well as a sample of children from continuously intact families. A second criterion required the presence of at least one quantitative measure of well-being, including scores on tests or scales, ratings, or percentages in outcome categories. Third, data from each study had to be presented in a form that allowed for the calculation of at least one effect size. Fourth, the study had to involve children; studies that dealt with adult children of divorce were set aside for a separate review. (Studies of college students were included in this analysis, however). Ninety-two studies were identified that met these criteria (see the Appendix for a complete listing); collectively, these studies involved over 13,000 children.

Calculation of Effect Sizes

We calculated effect sizes in several ways. The most direct method of calculation involved subtracting the mean score on the dependent variable for the intact sample from that of the divorced sample and dividing this difference by the pooled within-group standard deviation. Often, means and standard deviations were unavailable to the reader. In such instances, *t* values, *F* ratios, and correlation coefficients were transformed into effect sizes, using the formulas provided by Hedges and Olkin (1985). Likewise, percentage differences were translated into effect sizes by means of the probit transformation described by Glass, McGaw, and Smith (1981). Occasionally, only probability values were reported, so we estimated *t* values from a standard table by matching the degrees of freedom with the given significance level. Studies commonly dispatched with nonsignificant findings early in a discussion of the results. Because nonsignificant findings are as important in a meta-analysis as those found to be significant, we estimated the effect sizes in these cases by assuming a *p* value of .5. Because all of these methods produce slight overestimates of the effect size when the sample size is small, we used the correction proposed by Hedges and Olkin (1985) to calculate the unbiased estimator. Signs were affixed to effect sizes to reflect the comparative well-being of the groups. A negative sign indicated a lower level of well-being for children in the divorced group than for those in the intact group; a positive sign indicated the reverse.

We calculated separate effect sizes for each "independent sample" in a study. Independent samples existed when data were reported separately for subgroups of children, such as boys and girls. Altogether, the 92 studies reported data on 113 independent samples. In most studies, more than one dependent variable was used. Because significance tests require that effect sizes be independent, if two or more effect sizes were generated within the same outcome category (as defined in the following paragraph), the mean of these was taken. In a few cases, two or more articles were based on the same data set; these were treated as a single study in our analysis. In other cases, multiple reports described a longitudinal study of the same sample. In these cases, we relied on the publication that presented the most detailed information for the calculation of effect sizes. For example, for the longitudinal study by Hetherington, Cox, and Cox, we relied mainly on their 1985 publication. In

this way, each independent sample was represented only once in the meta-analysis for any particular outcome.

Distinctions can be drawn between two types of effect sizes, depending on the nature of the analysis reported. First, it is possible for effect sizes to be based on the unadjusted, zero-order differences between intact and divorced groups; these effect sizes reflect the *total covariation* between parental divorce and the outcome. Some of this covariance may be causal and some may be spurious. Second, many studies adjust the covariance for characteristics such as parental education, family income, and family size. Similarly, it is possible to match children in divorced and intact family groups on these variables. Effect sizes calculated on this basis reflect the estimated *direct effect* of parental divorce on the child's well-being, after adjustments are made for control variables. If the control variables are ones that precede both divorce and children's outcomes (such as parental education), the resulting effect size reflects the estimated total effect of divorce on children. On the other hand, if the control variables follow divorce (such as household income), the resulting effect size is likely to be an underestimate of the total effect of divorce.

Because of the clear difference in interpretation between effect sizes with and without controls, we calculated each separately when both adjusted and unadjusted results were provided in a study. However, because only a minority of studies used control variables (or matching of subjects), and because many of these studies mixed pre- and postdivorce controls in analyses, we lumped all effect sizes based on *any* controls in the same category. Consequently, the reader should be aware that there is some ambiguity in the interpretation of the resulting effect sizes.

Variables

We coded outcome measures into the following eight categories: (a) academic achievement (standardized achievement tests, grades, teachers' ratings, or intelligence); (b) conduct (misbehavior, aggression, or delinquency); (c) psychological adjustment (depression, anxiety, or happiness); (d) self-concept (self-esteem, perceived competence, or internal locus of control); (e) social adjustment (popularity, loneliness, or cooperativeness); (f) mother-child relations (affection, help, or quality of interaction); (g) father-child relations; and (h) other. The categories reflect the outcomes most frequently studied in relation to divorce and are the ones usually discussed in reviews of this literature.

Because one purpose of this study was to search for sources of variation in effect sizes between studies, we coded a variety of study characteristics. Several reviewers have pointed out the methodological limitations of much of the research on this topic, including reliance on small convenience or clinical samples, the use of psychometrically weak measures of child outcomes, and the failure to control for confounding family-of-origin characteristics, such as social class (Blechman, 1982; Demo & Acock, 1988; Emery, 1988; Kurdek, 1983). Given the differences in methodological sophistication between studies, we recorded information on the following variables: the type of sample used (clinical, convenience, or random sample); the sample size; the use of single-versus multiple-item measures of outcomes; and whether statistical controls (or matching of subjects) were used. As an exploratory measure, we also considered the source of information on child outcomes: child, parent, teacher, researcher, or other (in general, the researcher category refers to behavioral observations, whereas the first 3 categories are based on questionnaire on test responses).

We also included variables that reflect substantive characteristics of the sample. The sex of the sample (all boys, all girls, or mixed) was recorded because of the current interest in sex differences in children's adjustment to divorce (Zaslow, 1988, 1989). Because differences in children's reactions to divorce depending on the age of the child have been reported (e.g., Wallerstein & Kelly, 1980), we included the mean

age of children in the sample. Longitudinal studies have shown that the effects of divorce tend to diminish with time (e.g., Hetherington et al., 1982). For this reason, we recorded the mean number of years since separation for children in the sample. (Unfortunately, this information was provided in only 40% of studies.) We included the year in which data were collected to see if effect sizes vary over time. If the authors did not state when the data were collected, we assumed it was 2 years before the year of publication. Finally, the country in which the study was conducted was recorded for exploratory purposes.

We also attempted to code the race of the sample (Black, White, or mixed). But as it turned out, only five studies included data on all Black samples. As a result, comparisons between White and Black samples, although of considerable interest, were impossible to carry out. We can only conclude that too little research has been conducted on the implications of divorce for Black children. Given that the rate of separation and divorce is considerably higher for Blacks than for Whites (Walker, 1988), this omission is surprising.¹

Reliability

Although the coding of most variables was straightforward, the classification of outcomes into categories left some room for disagreement. Consequently, we performed a reliability check in which each of us independently classified 80 outcomes. The resulting Cohen's kappa value was .84 ($p < .001$); this indicated a moderately high level of agreement. A check was also made on the reliability of effect-size calculations. Each of us independently calculated all effect sizes from five articles, representing a total of 27 separate effect sizes. The product-moment correlation between the two sets of calculations was .98 ($p < .001$). When disagreements occurred, these were resolved through discussion between us.

Divorce and Children's Well-Being

Overall Effect Sizes

As an initial step, we examined effect sizes across all measures of well-being. Table 1 presents stem-and-leaf plots for effect sizes estimated from studies reporting results without ($n = 238$) and with statistical controls ($n = 81$). An examination of the two distributions indicates that effect sizes tended to be negative: 72% of studies without controls and 70% of studies with controls. This indicates that more than two thirds of studies found that children with divorced parents had lower levels of well-being than did children from intact homes.

A second trend evident from these distributions is the weak magnitude of effect sizes. The mean effect sizes were -0.19 and -0.13 for the distributions without and with control variables, respectively. The corresponding medians were -0.15 and -0.12 . This indicates that across all studies and outcome measures, children from divorced family backgrounds scored between about one fifth and one eighth of a standard deviation below children from intact families, depending on the nature of the analysis and the measure of central tendency used. These distributions also demonstrate that effect sizes were slightly weaker when control variables were used than when zero-order differences were reported.

Because significance testing requires that effect sizes be independent, we could not include more than one effect size per sample per outcome. In situations in which effect sizes were estimated on the basis of both unadjusted and adjusted differences between groups, it was necessary to choose between

Table 1
Stem-and-Leaf Plots for Effect Sizes

First two digits	Third digit
First sizes without control variables	
-1.6	0
-1.4	5
-1.1	69
-1.0	37
-0.9	03
-0.8	26
-0.7	03589
-0.6	00112444579
-0.5	0011223457778
-0.4	13455778889
-0.3	001122223334445666778899
-0.2	00011111234455667777899
-0.1	00111111223345555555666667777888889999
-0.0	122233344455555555556666777788889
0.0	0000000001233344444555666778889
0.1	001223344557789
0.2	022446688
0.3	003489
0.4	02
0.5	4
0.6	7
0.7	8
Effect sizes with control variables	
-1.2	9
-1.1	—
-1.0	—
-0.9	3
-0.8	—
-0.7	7
-0.6	367
-0.5	—
-0.4	122448
-0.3	00023367
-0.2	112245555689
-0.1	0001111222455559
-0.0	1122344566
0.0	00034555569
0.1	14
0.2	5567
0.3	003
0.4	137
0.5	4
0.6	—
0.7	—

them. Accordingly, we selected effect sizes based on the use of control variables when these were available.

This selection process resulted in a total of 284 separate effect sizes (78 based on controls, 206 based on zero-order differences) across all domains of well-being. Seventy percent of the effect sizes chosen for further analysis were negative. The mean for this distribution was -0.17 , and the median was -0.14 . Significance tests done on each of the individual effect sizes (Hedges & Becker, 1986) revealed that 23% were significant and

¹ A complete list of studies, effect sizes, and variables used in all analyses is available from Paul R. Amato.

negative, whereas only 2% were significant and positive ($p < .05$, two-tailed). Therefore, results in which children of divorce had a comparatively high level of well-being were rare. It should be noted, however, that three quarters of all effect sizes did not differ significantly from zero.

Effect Sizes Within Domains of Well-Being

To calculate the overall effect size for each domain of well-being, we weighted the effect sizes by their respective sample sizes, following procedures outlined by Hedges and Olkin (1985). The results are presented in Table 2. These data reveal that mean effect sizes for the various domains of well-being were negative and significant, with the exception of the "other" category, that which was positive but not significantly different from zero. The strongest mean effect sizes were for conduct and father-child relations. The mean effect sizes for psychological adjustment and self-concept, although significant, were quite weak.

Literature reviews, no matter how extensive, may inadvertently overlook relevant research, particularly unpublished studies. Because a bias exists to publish only those studies that locate significant variation, we calculated a fail-safe N for each significant mean effect size (Rosenthal, 1979). As shown in Table 2, the fail-safe N s for all effect sizes are large. It is unlikely, for example, that 3,474 additional studies of conduct exist that yield null findings. Consequently, our faith in the robustness of these results is strong.

Discussion

Our findings, which are based on data from over 13,000 children, confirm that children of divorce experience a lower level of well-being than do children living in continuously intact families. The view that children of divorce adapt readily and reveal no lasting negative consequences is simply not supported by the cumulative data in this area.

However, the effect sizes in this literature are weak rather than strong. The largest reliable mean effect sizes (for conduct

and father-child relations) are in the order of one quarter of a standard deviation between intact and divorced groups. The mean effect sizes for psychological well-being, self-concept, and social adjustment reflect approximately one tenth of a standard deviation between groups. Although these latter findings are statistically significant, many people would consider them to be trivial.

Some authors (e.g., Sorosky, 1977) appear to hold the view that divorce has profound detrimental effects on children—a notion that is not supported by our relatively modest findings. This perception is probably reinforced by the manner in which results are often reported. Researchers tend to spend a good deal of time discussing outcomes that attain significance, but tend to ignore those that do not. This tendency to focus only on significant findings may lead to the impression that the differences between divorced and intact groups are stronger and more pervasive than the data warrant. Because we averaged all effect sizes within samples for a given outcome (significant or not), our results yield a relatively objective assessment of what the literature actually shows.

Between-Studies Comparisons

The last column in Table 2 reports the Hedges and Olkin (1985) measure H of effect-size homogeneity. If significant, this statistic indicates that the effect sizes display a greater degree of heterogeneity than would be expected by chance. This statistic serves as a test for study by effect-size interactions; that is, it tests to see if the effects of divorce on children are stronger in some studies than in others. When significant, it is advisable to assess study characteristics to determine if they account for variation in effect sizes. As one can see, all of the H coefficients were significant.

Tables 3 through 11 present mean effect sizes by various study characteristics for each outcome category. In these tables, the H between-value reflects the amount of heterogeneity that can be attributed to each study characteristic. In the present context, it tests the significance of the difference in mean effect sizes across categories. The H within-value reflects the degree of heterogeneity that remains within categories.

Nature of the Sample

Table 3 presents comparisons of effect sizes based on the type of sample used: clinical, convenience, or random. (Random samples in this literature are usually drawn from a population of households, although sometimes they are drawn from a single school.) The H between-values reveal that sample type was significantly related to effect sizes for all outcomes except academic achievement and self-concept. For conduct and social adjustment, effect sizes were strongest in studies based on convenience samples. Although nonsignificant, the pattern was similar for academic achievement as well. Furthermore, for psychological adjustment, convenience samples, as well as random samples, yielded stronger effect sizes than did clinical samples.

We suggest one tentative explanation for this pattern. Convenience samples generally consist of volunteers. Consequently, single parents whose children are presenting problems may be especially likely to volunteer in the hope that they might obtain

Table 2
Comparisons of Children From Divorced and Intact Families Across Various Domains of Well-Being: Mean Effect Sizes, Fail-Safe N Values, and Homogeneity Values

Domain of well-being	N	Mean effect size	Fail-safe N	H_T
School achievement	39	-.16*	855	85.6*
Conduct	56	-.23*	3,474	221.5*
Psychological adjustment	50	-.08*	464	98.6*
Self-concept	34	-.09*	111	87.2*
Social adjustment	39	-.12*	506	219.4*
Mother-child relations	22	-.19*	212	86.8*
Father-child relations	18	-.26*	456	73.0*
Other	26	.06		51.0*

Note. N refers to the number of effect sizes based on independent samples. A negative effect size indicates that the divorced group scores lower than the intact group in well-being. H_T is the Hedges and Olkin (1985) measure of homogeneity.

* $p < .001$.

Table 3
Mean Effect Size by Type of Sample

Outcome and sample	N	Mean effect size	H within	H between
Academic achievement				3.7
Clinical	5	-.12*	3.4	
Convenience	18	-.22***	37.2**	
Random	16	-.13***	41.3***	
Conduct				9.2*
Clinical	14	-.19***	13.3	
Convenience	27	-.30***	154.8***	
Random	15	-.21***	44.2***	
Psychological adjustment				20.4***
Clinical	12	-.03	18.2	
Convenience	29	-.13***	33.9	
Random	9	-.14***	26.1**	
Self-concept				0.1
Clinical	0	—	—	
Convenience	21	-.08*	61.0***	
Random	13	-.09**	26.1*	
Social adjustment				9.6**
Clinical	8	-.09*	134.9***	
Convenience	22	-.20***	52.7***	
Random	9	-.10**	22.2**	
Mother-child relations				27.9***
Clinical	2	-.24	1.4	
Convenience	14	-.07*	31.0**	
Random	6	-.33***	26.5***	
Father-child relations				37.0***
Clinical	0	—	—	
Convenience	13	-.16***	23.2*	
Random	5	-.55***	12.8**	

* $p < .05$. ** $p < .01$. *** $p < .001$.

information or assistance. This explanation is complicated, however, by the fact that convenience samples tended to yield the smallest effect sizes for mother-child and father-child relations. Regardless of the explanation, it is clear that studies based on convenience samples produce results that differ from those of studies using other types of samples. Given that, across all outcomes, convenience samples were the type of sample represented most often in the literature, this result is troubling.

Two other findings from Table 3 are noteworthy. First, although some may question the generalizability of results that are based on clinical populations, effect sizes derived from clinical samples were generally quite similar to those derived from random samples. Second, the results based only on random samples indicate that the estimated effects of divorce are stronger for measures of parent-child relationships than for measures of child functioning (i.e., the first 5 outcomes).

Sample Size

Table 4 contains effect sizes in relation to the total size of the sample. Significant results were obtained for social adjustment and father-child relations. In both cases, the largest studies yielded the weakest effect sizes, although the overall trend for father-child relations was curvilinear. Although nonsignificant, similar results were apparent for several other outcomes. Effect sizes may be weaker in large samples because large samples tend to be more heterogeneous than small samples, thus

attenuating correlations. Alternatively, because statistical power generally increases with sample size, researchers with large samples may be able to get their studies published on the basis of relatively weak (but significant) differences between groups.

Single- Versus Multiple-Item Measures

Effect sizes based on single-versus multiple-item measures of dependent variables are presented in Table 5. In general, the reliability of an instrument increases with the number of items. On this basis, one might have expected the effect sizes based on multiple-item measures to be stronger than those based on single-item measures. However, for academic achievement, conduct, mother-child relations, and father-child relations, effect sizes were significantly stronger when based on single-item rather than multiple-item measures. The result for psychological adjustment was an exception to this pattern. Although somewhat puzzling, these data suggest that studies with high quality measurement produce weaker estimates of the effects of divorce on children than do studies with poor quality measurement. (We return to this point in the discussion that follows.)

Use of Control Variables

Table 6 reports effect sizes in relation to whether studies used control variables in analyses. For academic achievement, effect

Table 4
Mean Effect Size by Total Sample Size

Outcome and sample size	N	Mean effect size	H within	H between
Academic achievement				2.6
15-70	12	-.23*	10.8	
71-484	16	-.20**	52.6***	
485-11,000	11	-.14***	19.6*	
Conduct				1.5
15-70	18	-.28***	23.8	
71-484	19	-.26***	99.6***	
485-11,000	19	-.22***	96.6***	
Psychological adjustment				4.6
15-70	21	-.22**	26.1	
71-484	11	-.12*	13.9	
485-11,000	18	-.07***	54.0***	
Self-concept				1.6
15-70	13	-.08	8.5	
71-484	14	-.14**	57.6***	
485-11,000	7	-.07**	19.5**	
Social adjustment				13.9***
15-70	12	-.33***	20.3*	
71-484	17	-.21***	55.2***	
485-11,000	10	-.07**	130.0***	
Mother-child relations				0.9
15-70	7	-.13	12.1	
71-484	7	-.15*	12.2	
485-11,000	8	-.20***	61.6***	
Father-child relations				14.2***
15-70	4	-.29	3.1	
71-484	7	-.50***	9.2	
485-11,000	7	-.22***	46.5***	

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5
Mean Effect Size by Number of Items Used to Measure Outcome

Outcome and N items	N	Mean effect size	H within	H between
Academic achievement				6.1*
Single item	8	-.26***	14.2*	
Multiple items	31	-.13***	65.3***	
Conduct				9.7**
Single item	17	-.28***	128.1***	
Multiple items	39	-.19***	83.7***	
Psychological adjustment				7.0**
Single item	13	-.03	32.2***	
Multiple items	37	-.12***	59.4*	
Self-concept				3.0
Single item	2	-.22**	0.1	
Multiple items	32	-.08***	84.1***	
Social adjustment				0.1
Single item	9	-.11***	160.8***	
Multiple items	30	-.13***	58.5***	
Mother-child relations				11.4***
Single item	5	-.30***	50.6***	
Multiple items	17	-.13***	24.8	
Father-child relations				17.7***
Single item	3	-.57***	13.3**	
Multiple items	15	-.23***	43.5***	

* $p < .05$. ** $p < .01$. *** $p < .001$.

sizes were significantly weaker when studies used control variables than when they did not. Similar but nonsignificant results were obtained for conduct, self-concept, and father-child relations. This is consistent with the assumption that some of the association between parental divorce and child outcomes is spurious and that zero-order results overestimate the negative effects of divorce on children. Furthermore, in the case of mother-child relations, the mean effect size was negative and

Table 6
Mean Effect Size by Use of Control Variables

Outcome	N	Mean effect size	H within	H between
Academic achievement				12.2***
No controls	22	-.25***	41.9**	
Controls	17	-.10**	31.5*	
Conduct				2.5
No controls	39	-.25***	170.5***	
Controls	17	-.20***	48.5***	
Psychological adjustment				4.1*
No controls	42	-.07***	85.0***	
Controls	8	-.16***	9.5	
Self-concept				2.6
No controls	25	-.11***	72.4***	
Controls	9	-.04	12.2	
Social adjustment				4.5*
No controls	27	-.10***	181.6***	
Controls	12	-.23***	33.3***	
Mother-child relations				28.0***
No controls	18	-.23***	48.7***	
Controls	4	.18***	10.1*	
Father-child relations				1.2
No controls	14	-.26***	62.9***	
Controls	4	-.38***	8.9*	

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 7
Mean Effect Size by Source of Data on Child

Outcome and source	N	Mean effect size	H within	H between
Academic achievement				8.5*
Child	21	-.17***	56.6***	
Parent	4	-.06	0.3	
Teacher	8	-.04	5.0	
Researcher	6	-.24***	15.2**	
Other	0	—	—	
Conduct				18.8***
Child	13	-.24***	96.4***	
Parent	16	-.18***	29.2*	
Teacher	11	-.17***	26.0**	
Researcher	15	-.32***	51.1***	
Other	1	.00	0.0	
Psychological adjustment				23.3***
Child	22	-.18***	34.2*	
Parent	13	-.06*	13.8	
Teacher	5	-.08	4.0	
Researcher	10	-.03	23.3**	
Other	0	—	—	
Self-concept				1.0
Child	30	-.09***	84.1***	
Parent	2	-.26	0.1	
Teacher	0	—	—	
Researcher	2	-.22	2.0	
Other	0	—	—	
Social adjustment				8.1*
Child	17	-.19***	49.6***	
Parent	8	-.04	15.0*	
Teacher	5	-.15*	3.8	
Researcher	8	-.14**	142.9***	
Other	1	-.17	0.0	
Mother-child relations				40.3***
Child	17	-.11***	45.1***	
Parent	2	-.24	1.4	
Teacher	1	-.49***	0.0	
Researcher	2	-.43*	0.0	
Other	0	—	—	
Father-child relations				0.2
Child	17	-.27***	72.8***	
Parent	0	—	—	
Teacher	0	—	—	
Researcher	1	-.41	0.0	
Other	0	—	—	

* $p < .05$. ** $p < .01$. *** $p < .001$.

significant when controls were not used and *positive* and significant when controls were used. This suggests that if social class and other variables are controlled, children in divorced families have particularly good relationships with their mothers.

On the other hand, for psychological and social adjustment, effect sizes were significantly stronger when controls were used than when they were not used; this suggests the possibility of a suppression effect. Overall, the implications of using control variables are somewhat unpredictable. Given that a variety of different control variables were used in these studies, including both pre- and postdivorce variables used simultaneously, this is not surprising.

Source of Data on Child

Table 7 contains mean effect sizes in relation to the source of information on the child: the child, a parent, a teacher, the

researcher, or someone else. The source was related to five of the seven outcomes. Although the pattern differs somewhat from outcome to outcome, it appears that effect sizes based on the reports of parents and teachers tend to be weaker than effect sizes based on other sources. These results suggest that divorced parents (usually custodial mothers) may underestimate their children's problems. Consequently, researchers may wish to avoid relying on parents' ratings as their sole source of information on children's functioning. Also, some researchers have suggested that teachers may stereotype children from one-parent families and exaggerate their problems (e.g., Santrock & Tracy, 1978). However, the present data show no evidence that comparisons based on teacher's ratings are more negative than those of other observers or children themselves. In fact, for academic achievement (an outcome for which teachers should be particularly knowledgeable), differences between children from intact and divorced families are smaller when based on teachers' reports than when based on direct observation or the testing of children.

One other finding is noteworthy. For mother-child relations, data derived from children's reports yielded the weakest effect sizes—although the small number of effect sizes for the other categories makes the interpretation of this variable problematic. Nevertheless, it suggests that children's relations with mothers in divorced families (as reported by others) are more problematic than children's self-reports might indicate.

Sex Composition of Sample

The implications of the child's gender are examined in Table 8. For academic achievement, the mean effect size for all-female samples was stronger than for all-male or mixed-sex samples. To determine if the difference between all-male and all-female samples was significant, we conducted a post hoc test (Hedges & Becker, 1986). This revealed that the difference between all-male and all-female samples was not significant, although the difference between all-female and mixed-sex samples was. A similar result was obtained for conduct, with effect sizes based on mixed-sex samples being lower than those based on same-sex samples. In contrast, for social adjustment, all-male samples yielded considerably stronger negative effect sizes than did all-female or mixed-sex samples. This was confirmed through a post hoc test ($p < .05$).

The notion that divorce has more negative consequences for boys than for girls has been expressed frequently in this literature (e.g., Guidubaldi, Cleminshaw, Perry, & McLoughlin, 1983; Hetherington et al., 1982; Wallerstein & Kelly, 1980). However, the data in Table 8 indicate that boys and girls did not differ in the extent to which parental divorce was associated with problems, with the exception that boys from divorced families exhibited more difficulty in adjusting socially than did girls. It is not clear why sex differences should exist for this particular variable and not for others. Given that boys may have more "externalizing" problems and girls may have more "internalizing" problems (Emery, 1982), it is of interest that sex differences were not found for outcomes such as conduct and self-esteem.

Some of the most frequently cited studies in this literature are ones that suggest more detrimental consequences of divorce for boys than for girls. However, many studies report no significant interaction between family type and gender of child (e.g.,

Table 8
Mean Effect Size by Sex of Sample

Outcome and sex	N	Mean effect size	H within	H between
Academic achievement				6.7*
Male	11	-.18***	17.4	
Female	5	-.30***	16.0**	
Mixed	23	-.13***	45.5**	
Conduct				32.8***
Male	14	-.40***	47.0***	
Female	9	-.32***	85.6***	
Mixed	33	-.18***	56.1**	
Psychological adjustment				1.1
Male	9	-.07	11.2	
Female	10	-.14*	25.7**	
Mixed	31	-.08***	60.6***	
Self-concept				1.2
Male	5	-.14	4.0	
Female	8	-.14*	5.9	
Mixed	21	-.08**	76.1***	
Social adjustment				66.1***
Male	6	-.57***	6.6	
Female	7	-.16*	55.1***	
Mixed	26	-.09***	91.6***	
Mother-child relations				1.4
Male	2	-.43*	0.1	
Female	2	-.24	3.1	
Mixed	18	-.18***	82.2***	
Father-child relations				0.8
Male	1	-.41	0.0	
Female	3	-.16	2.5	
Mixed	14	-.27***	69.7***	

* $p < .05$. ** $p < .01$. *** $p < .001$.

Amato, 1987; Amato & Ochiltree, 1987; Brady, Bray, & Zeeb, 1986; Kalter, Alpern, Spence, & Plunkett, 1984; White et al., 1985; Wiehe, 1984). Some studies even show that boys in divorced families are significantly better adjusted than are girls (e.g., Slater, Stewart, & Linn, 1983). Overall, our analysis reveals that when a large number of studies are considered, including studies that are infrequently cited, sex differences are not as pronounced as one might think.

Age Level

The age of the child is a variable that has been discussed a good deal in the literature. However, relatively few studies have involved direct comparisons of children of divorce in disparate age groups (see Amato, 1987; Amato & Ochiltree, 1987; Brady et al., 1986; and Tuckman & Regan, 1966, for exceptions). Table 9 presents effect sizes in relation to the age level of children in the study. Age was significantly associated with effect sizes for psychological adjustment, social adjustment, mother-child relations, and father-child relations. In general, it appears that effect sizes tended to be largest for children in primary school, high school, and in the "mixed" category. The latter category, in most instances, consisted of children of primary school and high school age. Therefore, with a few exceptions, it appears that effect sizes were strongest for children in the middle age groups. Interestingly, with the exception of father-child relations, mean effect sizes rarely achieved significance for samples of college students. Perhaps parental divorce has relatively few

Table 9
Mean Effect Size by Age of Sample

Outcome and age	N	Mean effect size	H within	H between
Academic achievement				3.2
Preschool	2	.17	1.1	
Primary	20	-.14***	42.1**	
Secondary	11	-.17***	30.0***	
College	3	-.24	6.4*	
Mixed	3	-.15**	2.8	
Conduct				7.8
Preschool	7	-.25*	6.9	
Primary	23	-.19***	43.5**	
Secondary	10	-.27***	94.6***	
College	1	-.07	—	
Mixed	15	-.26***	68.7***	
Psychological adjustment				14.4**
Preschool	6	.06	4.5	
Primary	16	-.08**	35.4**	
Secondary	14	-.16***	26.5*	
College	2	-.02	0.9	
Mixed	12	-.00	16.9	
Self-concept				4.6
Preschool	0	—	—	
Primary	13	-.02	16.0	
Secondary	11	-.12***	14.8	
College	7	-.09	51.6***	
Mixed	3	-.29	0.2	
Social adjustment				15.4**
Preschool	5	.10	14.9**	
Primary	17	-.20***	59.7***	
Secondary	5	.05	2.0	
College	3	-.04	2.0	
Mixed	9	-.09**	125.4***	
Mother-child relations				22.3***
Preschool	2	-.24	1.6	
Primary	7	-.29***	40.7***	
Secondary	4	-.14**	2.9	
College	6	-.05	18.6**	
Mixed	3	-.34***	0.7	
Father-child relations				25.8***
Preschool	1	-.41	0.0	
Primary	4	-.20***	23.6**	
Secondary	4	-.31***	4.0	
College	6	-.18***	11.2*	
Mixed	3	-.66***	8.4*	

* $p < .05$. ** $p < .01$. *** $p < .001$.

consequences for college students because of their maturity and independence from the family.

Year of Study

Table 10 presents effect sizes in relation to the year in which data were collected. Significant results were obtained for conduct, self-concept, and mother-child relations. For all three outcomes, effect sizes were strongest in the earlier decades. In addition, the H between-value was marginally significant for academic achievement ($p < .10$), and the uncategorized version of this variable yielded a product-moment correlation of .35 with effect sizes ($p < .05$, two-tailed), indicating that effect sizes were less negative in more recent years. Overall, these results suggest that the implications of parental divorce for children's

well-being have become less pronounced since the 1950s and 1960s.

Country of Study

Table 11 presents data on the association between effect sizes and the country in which the study was conducted. Foreign studies of children of divorce reported more problems with conduct, psychological adjustment, mother-child relations, and father-child relations than did studies conducted in the United States. This may be due to the fact that divorce is more common in the United States than in other western countries (United Nations, 1987) and, for this reason, may be less stigmatizing. In addition, the high divorce rate in this country may have increased parents' awareness to the point where many take active steps to decrease the stressfulness of marital disruption for their children. Conclusions are limited now by the small number of foreign studies. Nevertheless, cross-national research on the consequences of divorce for children has the potential to yield information relevant to the formulation of public policy and, for this reason, should be encouraged.

Years Since Divorce

As just described, we coded information from each study on the mean number of years since parental separation for children in the sample. Because only a minority of studies reported

Table 10
Mean Effect Size by Year Data Were Collected

Outcome and year	N	Mean effect size	H within	H between
Academic achievement				5.1
1950-1969	9	-.23***	36.8***	
1970-1979	17	-.14***	28.2*	
1980-1989	13	-.12***	15.5	
Conduct				22.7***
1950-1969	14	-.32***	109.8***	
1970-1979	19	-.17***	25.7	
1980-1989	23	-.18***	63.3***	
Psychological adjustment				3.4
1950-1969	9	-.03	40.2***	
1970-1979	18	-.10***	23.5	
1980-1989	23	-.10***	31.5	
Self-concept				7.9*
1950-1969	1	-.22***	0.0	
1970-1979	10	-.06	16.0	
1980-1989	23	-.05	63.3***	
Social adjustment				1.3
1950-1969	6	-.15***	137.2***	
1970-1979	9	-.09*	24.7**	
1980-1989	24	-.12***	56.2***	
Mother-child relations				36.9***
1950-1969	2	-.39***	13.5***	
1970-1979	11	-.18***	12.1	
1980-1989	9	.04	24.3**	
Father-child relations				5.6
1950-1969	1	-.18	0.0	
1970-1979	9	-.24***	54.3***	
1980-1989	8	-.40***	13.1*	

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 11
Mean Effect Size by Country in Which Study Was Conducted

Outcome and country	<i>N</i>	Mean effect size	<i>H</i> within	<i>H</i> between
Academic achievement				0.1
United States	29	-.16***	80.7***	
Others	10	-.16***	4.9	
Conduct				4.0*
United States	43	-.21***	134.0***	
Others	13	-.27***	83.5***	
Psychological adjustment				7.4**
United States	40	-.07***	82.4***	
Others	10	-.21***	8.8	
Self-concept				0.2
United States	26	-.09***	76.7***	
Others	8	-.07	10.3	
Social adjustment				0.0
United States	34	-.12***	218.8***	
Others	5	-.13	0.6	
Mother-child relations				18.5***
United States	18	-.13***	42.9***	
Others	4	-.37***	25.5***	
Father-child relations				8.0**
United States	15	-.25***	62.0***	
Others	3	-.58***	3.0	

* $p < .05$. ** $p > .01$. *** $p < .001$.

this information, we have not presented a table for this variable. Nevertheless, we analyzed what data we had.

On the basis of longitudinal studies (e.g., Hetherington et al., 1982), we expected effect sizes to be strongest for studies taking place shortly after the time of divorce. We found this result for one variable: conduct. Studies based on samples of children who experienced parental separation within the previous 2 years revealed stronger effect sizes ($M = -0.34$, $n = 8$, $p < .001$) than did studies based on samples of children who experienced parental separation more than 2 years ago ($M = -0.05$, $n = 8$, n_s ; H between = 6.43, $p < .05$). This finding suggests that conduct problems become less pronounced over time. Nevertheless, the absence of other significant results suggests that this finding should not be overinterpreted. (We return to this issue again in the theoretical discussion that follows.)

Multivariate Analysis

Because study characteristics covary, the interpretation of the univariate results may be ambiguous in some cases. For example, year of study and methodological aspects of studies are correlated, with more recent studies being more sophisticated than earlier ones. It is not clear, therefore, whether each makes an independent contribution to variations in effect sizes. Accordingly, we used a multivariate procedure—weighted multiple regression analysis for effect sizes—to supplement the univariate analysis (see Hedges & Becker, 1986; and Hedges & Olkin, 1985, for descriptions of this method).

For all multivariate analyses, a number of conventions were followed. Categorical predictors, such as type of sample, were recoded as dummy variables. The age variable was scored in the following manner: preschool = 1, primary = 2, high school = 3, college = 4. Mixed-age samples were usually a combination of

primary and high school children, so they were assigned a score of 2.5. Examination of some outcomes (such as self-concept and social adjustment) suggested that the association between sample age and effect sizes was nonlinear, so we added a quadratic term (age squared) to the regression equation to test for curvilinearity. Total sample size and year of study were allowed to assume their full range of values (uncategorized). Because of the small number of effect sizes relative to predictors, variables were entered in a stepwise fashion, with the procedure being completed when additional predictors entering the equation were no longer significant. All significance tests used a .05 alpha level.

In the multivariate analysis for academic achievement, effect sizes were larger in studies that used single- rather than multiple-item measures, reported zero-order differences between groups rather than adjusted differences, used data derived from children's reports and researchers' observations rather than other sources, and took place in earlier rather than more recent years. (Although significant in the univariate analysis, the sex composition of the sample did not attain significance.) The multiple regression equation for conduct indicated that effect sizes were larger in studies that were based on convenience samples rather than on other types of samples, used researchers' observations rather than other sources of data, involved same-sex rather than mixed-sex samples, and were conducted in countries other than the United States. (The year of study and number of items were not significant.) For psychological adjustment, effect sizes were larger in studies that were based on convenience samples and random samples rather than clinical samples, used multiple-item rather than single-item measures, used data derived from children rather than from other sources, and were conducted in countries other than the United States. (Age and the use of control variables were not significant.)

In the multivariate analysis for self-concept, only the year of the study significantly predicted effect sizes, with earlier studies showing stronger effects than more recent studies. The multiple regression equation for social adjustment revealed that convenience and all-male samples yielded more negative effect sizes than did other types of samples. In addition, the quadratic term for age was significant; this indicated that effect sizes were strongest for children in the middle of the age distribution (primary and mixed primary and secondary). (The total sample size, source, and the use of control variables were not significant.) For mother-child relations, effect sizes were more negative in studies that used convenience samples rather than other types of samples, reported zero-order differences rather than adjusted differences between groups, and used data derived from sources other than children. (The number of items, country, age, and year of study did not attain significance.) Finally, for father-child relations, effect sizes were stronger in studies that were based on random samples rather than convenience samples and used single-item rather than multiple-item measures. (Total sample size, age, and country were not significant.)

Discussion of Between-Studies Analysis

Methodological Aspects of Studies

The investigation of between-studies characteristics revealed a number of noteworthy trends. It appears—for at least some

outcomes—that methodologically strong studies tend to find smaller differences between children from divorced and intact families than do methodologically weak studies. For example, studies that used control variables (or matching of subjects) reported smaller effects than did studies that failed to use controls. This was true in general (as revealed in Table 1) and for the domains of school achievement and mother-child relations in particular. (The results for psychological and social adjustment were exceptions, although this was only true in the univariate analysis and not in the multivariate analysis.) Similarly, studies based on convenience samples generally showed stronger effects than did studies based on clinical or random community samples. This was observed for academic achievement, conduct, psychological adjustment (in relation to clinical samples only), and social adjustment. (This pattern was reversed, however, for measures of parent-child relationships.) In addition, studies that used large sample sizes generally found the smallest effects. This was true in particular for social adjustment and father-child relations. Finally, studies that used multiple-item measures tended to find smaller effects than did studies that used single-item indicators. This was the case for academic achievement, conduct, mother-child relations, and father-child relations. (This trend was reversed for psychological well-being.) Although the data in Tables 3 through 11 reveal a number of inconsistencies, they suggest that methodologically unsophisticated studies may *overestimate* the effects of divorce on children.

To explore this hypothesis further, a scale of methodological quality was constructed by adding 1 point for each of the following study characteristics: a nonconvenience sample (either clinical or random), a sample size that was larger than the median, the use of multiple-item as opposed to single-item measures, and the use of control variables in analyses or the matching of subjects on relevant background characteristics. This scale correlated positively and significantly with weighted effect sizes in two domains: school achievement ($r = .44, p < .001$) and conduct ($r = .24, p < .001$). This indicates that for these two outcomes, higher scores on the methodological quality scale were associated with higher (less negative) effect sizes.

Why would methodologically strong studies tend to find smaller effect sizes than methodologically weak studies? Weak studies may only get published if they find relatively large and hence significant, differences between children from divorced and intact families. Under these circumstances, reviewers and editors may feel that the results of a study are important enough to warrant publication in spite of methodological limitations. On the other hand, methodologically strong studies may get published regardless of their findings, and even null findings may find their way into print if the study is impressive enough. This state of affairs would mean that the average published result for methodologically weak studies would reflect a large effect size, whereas the average published result for methodologically strong studies would be comparatively modest.

Year of Study or Methodological Sophistication?

One intriguing trend to emerge from the between-studies analysis was an apparent decrease in the seriousness of the consequences of divorce for children since the 1950s and 1960s.

This may be due to the fact that divorce became a common occurrence in American society during the 1960s and 1970s (Cherlin, 1981). Consistent with this interpretation, attitude surveys show that divorce is more accepted today than in earlier decades (Cherlin, 1981; Thornton, 1985). At the same time, increased public concern about the effects of divorce may lead parents to take active steps to reduce its impact on children.

However, the year of the study was not a significant predictor of effect sizes in the multivariate equations for some outcomes. This may be because year of study is correlated with study characteristics, such as the use of control variables and multiple-item measures. This raises the possibility that the association between time and effect sizes is spurious—that is, more recent studies are more likely than earlier studies to use better methods, and studies that use better methods find smaller differences than do other studies.

To test this notion, we ran a further series of multiple regression analyses, using the methodological sophistication variable just described and the year of study as predictors. This revealed that for academic achievement, effect sizes were related to both study quality ($\beta = 0.41, p < .001$) and year of study ($\beta = 0.34, p < .001$). Similarly, for conduct, effect sizes were related to both study quality ($\beta = 0.15, p < .05$) and year of study ($\beta = 0.19, p < .05$). These results indicate that both variables made significant independent contributions to these two outcomes. However, for self-concept and mother-child relations, effect sizes were related significantly only to year of study ($\beta = 0.34, p < .01$, and $0.41, p < .001$, respectively) and not to study quality ($\beta = 0.12$ and 0.06 , respectively). Therefore, it appears that the decline in effect sizes over time cannot be explained by the growing methodological sophistication of research.

Examination of Theoretical Perspectives

Earlier in this article, we described three theoretical perspectives that have been used to account for the effects of divorce on children: parental loss, economic deprivation, and family conflict. We also derived several hypotheses from each perspective. In this section, we examine our sample of studies to assess the degree of support that exists for each hypothesis. We use meta-analytic techniques, when possible, for this purpose.

Parental Absence Perspective

This first perspective assumes that decrements in well-being experienced by children of divorce are due to the loss of a parent as a role model, source of emotional support, and practical help, and supervision. Based on this notion, we hypothesized that children who experience the death of a parent exhibit problems similar to those of children who experience parental divorce.

Twenty-three studies in our sample included data on children who experienced the death of a parent, in addition to data on children in divorced and intact families (Ambert & Saucier, 1984; Bachman, 1970; Booth, Brinkerhoff, & White, 1984; Crescimbeni, 1965; Douglas, Ross, & Simpson, 1968; Felner, Ginter, Boike, & Cowen, 1981; Felner, Stolberg, & Cowen, 1975; Gibson, 1969; Glueck & Glueck, 1968; Greenberg & Nay, 1982; Gregory, 1965a, 1965b; Hainline & Feig, 1978; Hetherington,

1972; Nelson, 1982; Parish, 1981b; Parish & Osterberg, 1986; Rosenberg, 1965; Santrock, 1972; Saucier & Ambert, 1982, 1986; Steinhausen, von Aster, & Gobel, 1987; Tuckman & Regan, 1966). These 23 studies reported data on 31 independent samples. For each sample, we calculated effect sizes, comparing children in the "death" group with those in the "intact" and "divorced" groups on academic achievement, conduct, psychological adjustment, self-concept, and social relations. (In this and in subsequent analyses, we only considered outcomes relevant to children's adjustment; we did not use the data on the quality of mother-child and father-child relationships.)

As predicted by the father-loss perspective, children who experienced the death of a parent were significantly lower on academic achievement than children in intact two-parent families (mean effect size = -0.22 , $n = 16$, $p < .001$); conduct ($M = -0.11$, $n = 11$, $p < .001$); psychological adjustment ($M = -0.15$, $n = 12$, $p < .001$); and self-esteem ($M = -0.09$, $n = 8$, $p < .05$). However, children who lost a parent through death were significantly higher than children of divorce in academic achievement ($M = 0.12$, $n = 16$, $p < .001$) and conduct ($M = 0.25$, $n = 11$, $p < .001$). Collapsing all the outcomes into a single category and calculating one effect size per independent sample revealed that children in the parental-death group were 0.14 of a standard deviation below children in the intact group ($n = 31$, $p < .001$) but 0.12 of a standard deviation above children in the divorced group ($n = 29$, $p < .001$).

These results provide some support for the parental-absence perspective by demonstrating that children who lose a parent through death exhibit a lower level of well-being than do children in intact two-parent families. In other words, both divorce and parental death are associated with decrements in children's well-being. However, our analysis also reveals that children of divorce have lower levels of well-being than do children who experience parental death. This indicates that there must be an additional mechanism operating in divorced families that lowers the well-being of children other than parent loss.

The second hypothesis derived from the parental absence perspective was that children of divorce have fewer problems if the custodial parent remarries than if the custodial parent remains single. A total of 21 studies in the present sample included data on children in stepfamilies as well as on children in divorced and intact families (Amato & Ochiltree, 1987; Baydar, 1988; Booth et al., 1984; Boyd & Parish, 1986; Brady et al., 1986; Chapman, 1977; Greenberg & Nay, 1982; Gregory, 1965a; Grossman, Shea, & Adams, 1980; Hetherington et al., 1985; B. Long, 1986; Parish, 1981a; Parish & Dostal, 1980; Parish & Wagle, 1984; Peterson & Zill, 1986; Rickel & Langner, 1985; Rosenberg, 1965; Santrock, 1972; Santrock, Warshak, Lindbergh, & Meadows, 1982; Smith, 1990; Steinhausen et al., 1987). These studies reported data on 27 independent samples. We calculated effect sizes across these samples, comparing children in stepfamilies with those in other family types.

This analysis revealed that children in stepfamilies, compared with children in intact two-parent families, were significantly lower in conduct (mean effect size = -0.32 , $n = 12$, $p < .001$), psychological adjustment ($M = -0.37$, $n = 9$, $p < .001$), self-esteem ($M = -0.16$, $n = 10$, $p < .001$), and social relations ($M = -0.14$, $n = 11$, $p < .01$) and were marginally lower in academic achievement ($M = -0.07$, $n = 10$, $p < .10$). Further-

more, children in stepfamilies, compared with children in divorced single-parent families, were significantly lower in psychological adjustment (mean effect size = -0.16 , $n = 9$, $p < .01$) and were marginally significantly lower in conduct ($M = -0.09$, $n = 12$, $p < .10$). Combining all outcomes and computing a single effect size for each independent sample revealed that children in stepfamilies were 0.17 of a standard deviation below children in intact families ($n = 27$, $p < .001$) and 0.03 of a standard deviation below children in divorced single-parent families (not significant).

These results indicate that children living with a stepparent exhibited considerably more problems than did children living with both biological parents. This suggests that parental remarriage does not "solve" problems that may have been generated by an absent parent. In fact, there is some evidence (mainly in relation to psychological adjustment) that children in stepfamilies may be worse off than children in single-parent families. These findings clearly do not support the hypothesis.

However, the implications of living with a stepparent may vary with the sex of the child. Five studies in our sample compared children in stepfamilies and children in single-parent families separately for boys and girls. Each found evidence that the presence of a stepparent (in all five studies, a stepfather) improves the well-being of boys but either has no effect on or decreases the well-being of girls (Chapman, 1977; Hetherington et al., 1985; Peterson & Zill, 1986; Santrock, 1972; Santrock et al., 1982). For these studies, we calculated effect sizes separately for boys and girls. This procedure revealed that, across all outcomes, boys in stepfather families were 0.31 of a standard deviation *above* boys in single-parent families ($n = 5$, $p < .05$, two-tailed), whereas girls in stepfather families were 0.14 of a standard deviation *below* girls in single-parent families (not significant). The difference between the two mean effect sizes was significant ($Z = 2.53$, $p < .05$). These results suggest that the addition of a stepfather may indeed help to offset the loss of the biological father—but for boys only. Of course, the number of studies is small, and more research is needed before a firmer conclusion can be reached.

The third hypothesis derived from the parent-loss perspective is that the level of contact and the quality of the relationship with the noncustodial parent is positively associated with children's well-being. To evaluate this hypothesis, we included several additional studies based on samples of children of divorce that did not include a comparison group of children in intact families. Six studies showed that children's well-being is higher when frequent contact is maintained with the noncustodial parent (Guidubaldi, Perry, & Nastasi, 1987; Hetherington et al., 1982; Jacobson, 1978a; Lowenstein & Koopman, 1978; MacKinnon, 1989; Southworth & Schwarz, 1987). However, in several of these studies, the associations only appeared for certain outcomes. Furthermore, six studies failed to find associations between the frequency of contact with the noncustodial parent and children's well-being (Furstenberg, Morgan, & Allison, 1987; Hess & Camara, 1979; Hodges, Buchsbaum, & Tierney, 1983; Kalter et al., 1989; Kurdek & Berg, 1983; Luepnitz, 1982), and three found that contact is associated with *increased* problems for children (Baydar, 1988; Hodges, Wechsler, & Ballantine, 1979; Johnston et al., 1989). To further complicate this picture, the effects may vary with the sex of the child and the

noncustodial parent (e.g., Zill, 1988). Overall, our review suggests that support for this hypothesis is weak.

Economic Disadvantage Perspective

The second theoretical perspective assumes that problems exhibited by children of divorce have their origin in economic hardship associated with living in a single-parent family. As we noted, this perspective suggests that few differences should be observed between children from divorced and intact families if family income is controlled statistically or if families are matched on income level.

One direct method of assessing this explanation is to compare children in divorced families with children in intact families on measures of well-being both before and after controlling for family income. Unfortunately, few studies have included this simple procedure. Guidubaldi et al. (1983) found that without controls for income, children in divorced families scored significantly lower than children in intact families on 27 out of 34 outcomes. Controlling for income reduced the number of significant differences to 13 (Guidubaldi et al., 1983, Table 4). Guidubaldi et al. concluded that income accounts for a substantial proportion of the variance in children's outcomes associated with divorce—in particular for measures of academic achievement.

Several other studies provide supporting evidence. Hodges et al. (1978) found that limited financial resources predicted maladjustment among children of divorce, but not among children in intact families; Smiley, Chamberlain, and Dalgleish (1987) found that mothers in divorced families were more likely than mothers in intact families to report that recent financial changes had had a negative impact on their children; Fine, Moreland, and Schwebel (1983) found that a perceived decline in socioeconomic status after divorce was associated with more negative ratings of parent-child relationships.

Overall, these studies provide some support for the hypothesis that economic decline accounts for some of the negative consequences of divorce. However, in the Guidubaldi et al. (1983) study, children in divorced families continued to score below children in intact families even after the two samples were statistically equated for income. This indicates that economic disadvantage cannot be the sole explanation for the impact of divorce on children.

An economic perspective also leads to the hypothesis that the well-being of children of divorce is enhanced if custodial mothers remarry, because this usually results in improvements in financial status. However, this meta-analysis, as just reported, found little evidence to support this idea. The one exception was among studies that reported data for boys and girls separately, as just noted. However, the fact that the presence of a stepfather was associated with improved well-being for boys but not for girls provides more support for a parental absence or socialization perspective than for an economic disadvantage perspective.

Finally, this perspective suggests the hypothesis that children experience fewer problems if fathers rather than mothers have custody, because fathers usually earn more income than do mothers. Our sample contained six studies (involving seven independent samples) that allowed us to calculate appropriate

effect sizes (Dunlop & Burns, 1988; Gibson, 1969; Gregory, 1965a; Peterson & Zill, 1986; Steinhausen et al., 1987; Stephens & Day, 1979). We supplemented our sample with several additional studies of mother and father custody (Johnston et al., 1989; Luepnitz, 1982; Lowenstein & Koopman, 1978; Santrock & Warshak, 1979). The mean effect size indicated that, across all outcomes, children in father-custody families were 0.15 of a standard deviation higher than were children in mother-custody families ($Z = 1.98, p < .05$). Thus, the hypothesis was supported.

Support for this hypothesis, however, is qualified. The studies by Camara and Resnick (1988) and Santrock and Warshak (1979) found significant interactions between custody and gender of child. For a variety of outcomes, boys in mother-custody families were worse off than girls, whereas girls in father-custody families were worse off than boys. If the effects of custody do indeed vary with the gender of the parent and the child, such a pattern would support a perspective based on parental absence-socialization rather than economic hardship. These results are also consistent with the trend noted earlier for boys in stepfather families—but not girls—to be better off than their counterparts in single-parent families.

Family Conflict Perspective

The third perspective assumes that divorce affects children primarily because of the conflict that occurs between parents before and during the separation period. The conflict perspective leads to the hypothesis that children in intact families with high levels of interparental conflict exhibit problems similar to those of children of divorce.

In relation to this hypothesis, a total of eight studies reported data separately for children in high-conflict intact families, low-conflict intact families, and divorced families (Berg & Kelly, 1979; Booth et al., 1984; Greenberg & Nay, 1982; Kelly & Berg, 1978; B. Long, 1986; Nye, 1957; Peterson & Zill, 1986; Webster-Stratton, 1989). These eight studies included data from nine independent samples. We calculated effect sizes to allow comparisons between these groups.

Compared with children in intact low-conflict families, children in intact high-conflict families scored significantly lower in conduct (mean effect size = $-0.60, n = 4, p < .001$), psychological adjustment ($M = -0.68, n = 4, p < .001$), and self-concept ($M = -0.59, n = 2, p < .001$). Compared with children in divorced families, children in high-conflict intact families scored significantly lower in psychological adjustment ($M = -0.31, n = 4, p < .001$) and self-esteem ($M = -0.35, n = 2, p < .05$). Combining all outcomes and computing a single effect size per independent sample revealed that children in high-conflict intact families scored 0.32 of a standard deviation below children in low-conflict intact families ($n = 9, p < .001$) and 0.12 of a standard deviation below children in divorced families ($n = 9, p < .05$). These results strongly support a conflict perspective; not only were children in high-conflict intact families considerably worse off than children in low-conflict intact families, but they also exhibited lower levels of well-being than did children in divorced families.

Nine additional studies pertinent to this hypothesis could not be included in the aforementioned analysis because the authors

did not present sufficient information for the calculation of effect sizes. In each of these studies, researchers had ratings of family conflict for both intact and divorced families. Six of these studies found that ratings of conflict, but not family type, were significantly related to children's well-being (Dancy & Handal, 1984; Dunlop & Burns, 1988; Ellison, 1983; Enos & Handal, 1986; Mechanic & Hansell, 1989; Slater & Haber, 1984). N. Long, Forehand, Fauber, and Brody (1987) found that divorce was negatively related to two outcomes (perceived cognitive and social competence), whereas conflict was negatively related to five measures of academic achievement, social competence, and behavior. Camara and Resnick (1988) found that family status (divorced vs. intact) was significantly associated with five outcomes, but when measures of conflict and parents' "conflict style" were entered into regression equations, family status was no longer significantly associated with any outcome. Finally, in a prospective study, Block, Block, and Gjerde (1986) found that boys in divorced families exhibited a higher level of behavior problems than did boys in intact families before parental separation. All of these findings are entirely consistent with a family conflict perspective.

If children's problems are a reaction to high levels of marital discord, it follows that these problems should improve after the marital relationship has ended. This leads to the hypothesis that the well-being of children is positively correlated with the length of time since divorce. The longitudinal study of Hetherington et al. (1982) provides some support for this hypothesis. In this study, the behavior of both girls and boys improved considerably after 2 years, although boys in single-parent families continued to exhibit more conduct problems than did boys in intact families. Similarly, longitudinal studies by Rickel and Langner (1985), Kurdek, Blisk, and Siesky (1981), and Parish and Wgle (1985) found that differences between children in intact and divorced families became less pronounced over time.

In the analysis of between-studies characteristics just described, we noted that studies based on samples of children observed within 2 years of parental separation yielded stronger effect sizes for conduct than did studies based on other samples of children. This finding is also consistent with the hypothesis, although the results for the other six outcomes were not significant.

To investigate the hypothesis further, we examined cross-sectional studies that correlated time since divorce with children's adjustment. Of these studies, five found no significant association between length of time and child outcomes (Amato & Ochilree, 1987; Baydar, 1988; Hodges et al., 1979; Kalter et al., 1984; Wyman, Cowen, Hightower, & Pedro-Carroll, 1985). In support of the hypothesis, two studies found that time since divorce was positively associated with children's adjustment (Jacobs, Guidubaldi, & Nastasi, 1986; Smiley et al., 1987). In contrast, Hodges et al. (1983) found that time since divorce was negatively associated with one form of adjustment, but was not associated with nine other outcomes. Overall, these studies provided little support for the hypothesis.

In addition, some studies correlated age at family disruption with children's adjustment. When the children in these studies are homogeneous in age, these correlations are essentially the same as correlations between time since divorce and adjustment. Of these studies, six found no association between time

and adjustment (Booth et al., 1984; Chapman, 1977; Gibson, 1969; Greenberg & Nay, 1982; Hetherington, 1972; Mednick, Reznick, Hocevar, & Baker, 1987). Consistent with the hypothesis, three studies found that recent disruptions were associated with poorer outcomes for children (Guttman, 1987; Kinard & Reinherz, 1984, 1986; Smith, 1990). Finally, contrary to the hypothesis, Hainline and Feig (1978) found that time since disruption was associated with a less internal locus of control, although no significant effects were observed for three other measures.

In summary, longitudinal studies generally provided support for the notion that children's functioning improves with the passage of time since divorce, but support from cross-sectional studies is weak, with most studies having found no association between time and children's well-being. This discrepancy may be due to the fact that the within-subjects designs of longitudinal studies are more powerful at detecting differences than are the between-subjects designs of cross-sectional studies.

A third hypothesis based on a conflict perspective is that children's well-being is inversely correlated with the level of postdivorce conflict that persists between parents. Several studies have reported data relevant to this hypothesis. Studies by Kurdek and Berg (1983), Jacobson (1978b), Luepnitz (1982), and Johnston et al. (1989) found that less conflict and greater cooperation between parents predicted better divorce adjustment and fewer problems among children. Guidubaldi et al. (1987) found that a decrease in parental conflict since divorce predicted better adjustment in boys but not girls. MacKinnon (1989) found that a harmonious relationship between ex-spouses was associated with positive relationships between siblings. Booth et al. (1984) found that minimal postdivorce conflict between ex-spouses was associated with fewer problems in dating relationships among college students from divorced families. Hess and Camara (1979) found that parental harmony was related to less stress and aggression in children in a combined divorced- and intact-family sample. These findings are in accord with the qualitative reports of other research teams (Hetherington et al., 1982; Wallerstein & Kelly, 1980). Only one study (Hodges et al., 1983) found that custodial mothers' ratings of conflict with the ex-spouse were not correlated with children's adjustment. Overall, therefore, the evidence generally supports the hypothesis.

Summary of Theoretical Considerations

The father-loss perspective assumes that children of divorce are handicapped by the absence of one parent (usually the father) from the household. The results of our meta-analysis confirm that children who lose a parent through death score lower on measures of well-being than do children in intact two-parent families. However, children who experience parental death tend to be better off than children who experience divorce. Furthermore, children in stepfamilies, overall, are no better off than children of divorce. This indicates that the addition of a second adult to the household does not necessarily improve children's functioning, although there is some evidence that this may occur for boys in stepfather families. Finally, the evidence is not strong that continued contact with the noncustodial parent improves children's well-being. Overall, the data suggest

that parental absence may be a factor in children's reaction to divorce, but it is not the only mechanism.

The economic disadvantage perspective holds that problems exhibited by children of divorce are due to economic hardship following family disruption. Some support was found for the notion that differences between children from intact and divorced families are less pronounced when income is controlled statistically, although surprisingly few studies have presented relevant data. But even with income controlled, significant differences persist between children from intact and divorced families, suggesting that other factors are operating in addition to economics. The hypothesis that children's well-being is higher if they live with stepfathers than with single mothers was not supported, except among boys. However, evidence for sex differences supports a parental absence-socialization perspective rather than an economic perspective. Finally, some support was found for the hypothesis that children have a higher level of well-being in father-custody families than in mother-custody families. However, the fact that several studies found interactions between sex of parent and sex of child clouds the support for this hypothesis. Overall, the economic disadvantage perspective has received minor support from the studies conducted thus far.

In contrast to the modest support for the previous perspectives, the family conflict explanation was strongly supported. The hypothesis that children in intact families marked by high levels of interparental conflict reveal problems comparable to those of children in divorced families was confirmed. In fact, children in divorced families appear to have a higher level of well-being than do children in high-conflict intact families. The hypothesis that children's functioning improves with the passage of time is supported by longitudinal studies, but receives only modest support from cross-sectional studies. However, longitudinal studies are superior to cross-sectional designs in drawing inferences about time, so we should weight the results from longitudinal research more heavily in considering the degree of support for the hypothesis. Finally, the hypothesis that postdivorce conflict between parents is associated with a low level of well-being among children also received support. The fact that postdivorce conflict persists between many parents may also account for why support for the hypothesis of improvement over time was modest.

Of the three positions, the family conflict perspective is supported best by the available evidence. However, some support exists for all three positions, and no single perspective accounts fully for the pattern of findings. The concepts of parent absence, economic disadvantage, and family conflict all appear to be necessary for a complete understanding of the mechanisms through which divorce affects children.

Conclusion

Parental divorce (or factors associated with it) appears to lower the well-being of children. However, the estimated effects are generally weak, with methodologically sophisticated studies and more recent studies tending to find even smaller differences between groups. These weak effect sizes can be interpreted in two ways. First, parental divorce may be a stressor that, in the larger scheme of things, has relatively minor effects

on most children. This would appear to be the conclusion reached by some reviewers, such as Emery (1988). Second, children of divorce may be seriously affected, but existing studies have not clearly revealed this. This latter possibility may exist for three reasons.

First, the measurement of many dependent variables is often crude, resulting in a good deal of random measurement error. Less-than-perfect measurement attenuates associations between divorce and children's well-being and leads to an underestimate of the true effect size.

Second, studies often include a large number of outcomes, some of which have only a tenuous theoretical connection to parental divorce. One gets the impression that some authors include multiple dependent variables in the hope that at least a few will show significant differences. Including effect sizes based on all of these measures in a meta-analysis dilutes the mean effect size considerably. If researchers were to limit their analyses to measures that have strong theoretical links to divorce, future studies might demonstrate stronger and more consistent connections between divorce and children's well-being.

A third possibility is that researchers are looking for the effects of divorce in the "wrong place." Divorce and its concomitant circumstances (loss of parental contact, economic hardship, and exposure to conflict) may increase the risk of certain problems primarily in late adolescence and early adulthood. Sociological studies have shown that people who experience parental divorce as children, compared with individuals who grow up in continuously intact families, have lower educational attainment (McLanahan, 1985), earn less income (Hill, Augustyniak, & Ponza, 1987), and are more likely to be dependent on welfare (McLanahan, 1988). They are also more likely to bear a child out of wedlock (McLanahan & Bumpass, 1988), get divorced (Glenn & Kramer, 1987), and be the head of a single-parent family (McLanahan, 1988). These problems for adult children of divorce, in turn, may be associated with decrements in psychological well-being (Amato, 1988; Glenn & Kramer, 1985). A recent review of the literature on adult children of divorce has found broad support for the notion that parental divorce has lasting implications for children's life chances (Amato & Keith, 1991). In other words, the long-term consequences of parental divorce for adult attainment and quality of life may prove to be more serious than the short-term emotional and social problems in children that are more frequently studied. Further research on adult children of divorce—in particular, longitudinal studies of children as they enter adulthood—would be of great value in understanding this phenomenon.

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(Appendix follows on next page)

Appendix

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