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Child Adjustment in Joint-Custody Versus Sole-Custody Arrangements: A Meta-Analytic Review

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The author meta-analyzed studies comparing child adjustment in joint physical or joint legal custody with sole-custody settings, including comparisons with paternal custody and intact families where possible. Children in joint physical or legal custody were better adjusted than children in sole-custody settings, but no different from those in intact families. More positive adjustment of joint-custody children held for separate comparisons of general adjustment, family relationships, self-esteem, emotional and behavioral adjustment, and divorce-specific adjustment. Joint-custody parents reported less current and past conflict than did sole-custody parents, but this did not explain the better adjustment of joint-custody children. The results are consistent with the hypothesis that joint custody can be advantageous for children in some cases, possibly by facilitating ongoing positive involvement with both parents.

Research evidence has clearly demonstrated that, on average, children from divorced families are not as well adjusted as those in intact families, although this relative disadvantage does not necessarily imply clinical levels of maladjustment (Amato & Keith, 1991b; Guidubaldi & Perry, 1985). Joint custody, an arrangement that involves shared legal and/or physical custody of children following divorce of their parents, has increased in popularity as an option in divorce since the 1970s, with many states now having either a preference or presumption for joint legal custody (Bender, 1994). An ongoing debate between proponents and opponents of joint custody has continued since the 1970s as well, with different researchers and authors expressing both strong opposition (e.g., Goldstein, Freud, & Solnit, 1973; Kuehl, 1989) and strong support (e.g., Bender, 1994; Roman & Haddad, 1978). Arguments in favor of joint custody have often focused on benefits for the child of maintaining relationships with both parents. In contrast, opponents have argued that joint custody disrupts needed stability in a child's life and can lead to harm by exposing children to ongoing parental conflict.

A variety of theoretical perspectives have been proposed to explain the links between divorce and child adjustment (Hetherington, Bridges, & Insabella, 1998): individual characteristics of the child that might increase vulnerability to maladjustment; the change in family composition and the possible negative effects of father absence in the typical maternal custody situation; the increased economic stress and problems in shifting from a two-parent to a one-parent

household; effects of parental distress on the child; and changes in family processes such as conflict and expression of emotion. Buchanan, Maccoby, and Dornbusch (1996) classified factors affecting children's postdivorce adjustment into three categories: loss of a parent, interparental conflict, and diminished parenting (in which the quality of parenting from the custodial parent deteriorates, typically during the first 2 years after divorce). In an analysis of several large-scale national samples, McLanahan (1999) found that father absence due to divorce is associated with less school achievement for both boys and girls, more labor market detachment (i.e., unemployment) for boys, and early childbearing for girls. The impact of father absence seemed to be mediated by several variables, including loss of parental resources (less involvement and supervision), loss of financial resources, and loss of community resources (the broader network of social involvement, interaction, and support obtained from each parent). In a meta-analysis of 63 studies of nonresident fathers' role in children's well-being, Amato and Gilbreth (1999) found that authoritative parenting and feelings of closeness between father and child related to well-being. In addition to child support payments, authoritative parenting by the father was the most consistent predictor of outcomes including school achievement, externalizing (behavioral) problems, and internalizing (emotional) problems.

Notably, joint custody (and joint physical custody in particular) is relevant to many of the issues raised by Buchanan et al. (1996), Amato and Gilbreth (1999), Hetherington et al. (1998), and McLanahan (1999). For example, ongoing and frequent access to both parents may mitigate potential effects of parental absence as seen in sole-custody households, and access to the households and resources of both parents may reduce economic stress and disadvantage for the child. On the other hand, as critics of joint custody have noted, close ongoing contact with both parents might expose the child to ongoing conflict. Thus, research on custody and adjustment needs to examine not just differ-

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ences in adjustment across different custodial settings, but also how the factors identified here may relate to any adjustment differences found. It is important to recognize that such comparisons cannot establish a causal role for joint versus sole custody in child adjustment, because such research is necessarily relational rather than experimental in nature. However, it would still be possible to identify which custody type (if any) is associated with better adjustment in different areas, and what variables appear to moderate any relationship found.

During the past 20 years, an increasing body of research evidence on the adjustment of children in both types of custody settings has developed, and some reviewers have specifically compared child adjustment in joint- and sole-custody settings (e.g., Johnston, 1995; Twaite & Luchow, 1996). These reviewers presented varying conclusions: some argued that the research literature unequivocally supports joint custody (Bender, 1994); others argued that variables such as parental conflict are more important than custodial arrangement in determining child outcomes (Twaite & Luchow, 1996) and that joint custody is likely to be inappropriate in high-conflict situations (Johnston, 1995). Still others presented mixed findings in which no single custody arrangement can be assumed to be preferable (Kelly, 1993). These authors conducted traditional narrative literature reviews that attempt to organize and make sense of a literature by reporting on the findings of a number of relevant studies, noting significant and nonsignificant findings, and forming holistic impressions of the literature reviewed. However, such reviews are subject to a number of potential problems: selective citation of studies; reporting results consistent with the reviewer's perspective, combined with minimization or nonreporting of inconsistent results; focusing on statistical significance rather than on the magnitude of the relationship between variables; and failure to examine study characteristics as moderators of results (Johnson, 1989; Rosenthal, 1984).

In this review, a meta-analysis of child adjustment in sole- and joint-custody situations was conducted in order to avoid some of the problems of traditional literature reviews and to integrate as much of the relevant literature as possible. Meta-analytic reviews integrate research literature in a more systematic and quantitative fashion than traditional narrative reviews (Rosenthal, 1984) by converting different statistical results into a common metric of effect size such as Cohen's (1988) *d* and systematically examining the effect of various study qualities on the magnitude of the effect.

The goal of this review was to locate and meta-analytically integrate reports of child adjustment that directly compare children in joint-custody (legal and/or physical) and in sole-custody settings following divorce. Based on the arguments advanced in favor of joint custody (e.g., Bender, 1994), the literature demonstrating adjustment difficulties for children in sole-custody families when compared to children in intact families (e.g., Amato & Keith, 1991b; Guidubaldi & Perry, 1985), and the relevance of ongoing relationships with both parents to theoretical perspectives on child adjustment in divorce (e.g., Hetherington et al., 1998), it was hypothesized that on average children in joint-custody arrangements would demonstrate better ad-

justment than children in sole-custody arrangements. Although the suggested hypothesis (and subsequent hypotheses) is directional, all statistical tests were based on appropriately conservative two-tailed probabilities. As noted previously, joint custody cannot be proven to be the causal factor in any such difference. However, such an outcome would be consistent with suggestions that, by providing for an ongoing, close relationship with both parents in a way not possible in sole-custody arrangements that emphasize limited visitation with the noncustodial parents, joint custody may work to overcome the difficulties for the child potentially caused by the parental absence, economic stress, socioeconomic disadvantage, and changes in family processes that might accompany divorce. Exposure to parental conflict may potentially be greater in a joint-custody setting than in a sole-custody setting, and consequently offset some of these possible benefits, but this is a concern that can be examined empirically.

Because most sole-custody arrangements are maternal rather than paternal custody, the primary focus of the review was comparison of joint-custody samples with primarily or exclusively sole maternal custody samples. In addition, some studies also included separate paternal custody groups or intact family groups. These groups were used to conduct secondary meta-analyses comparing paternal custody and joint-custody children, and intact-family and joint-custody children. Based on the reasoning that joint custody is more beneficial than harmful because it provides a higher degree of ongoing support and resources from both parents than other custody arrangements, it was hypothesized that joint-custody children would be relatively better adjusted than paternal custody children. It was further hypothesized that joint-custody and intact-family children would be relatively equal in level of adjustment because both groups are maintaining ongoing relationships involving frequent contact with both parents.

A secondary goal of the current review was to examine how theoretically relevant characteristics of participant populations and of studies might moderate the relationship between custody arrangements and outcomes. For example, some critics of joint custody have expressed concern that this arrangement will expose children to ongoing parental conflict, resulting in more stress and adjustment problems. Thus, wherever possible joint-custody and sole-custody groups were compared on levels of conflict between parents either now or in the past, and conflict level was examined as a moderator of adjustment differences. Although interparental conflict might reduce potential benefits, joint-custody parents may experience lower levels of conflict at the time of divorce than sole-custody parents, which allows them to enter into joint-custody arrangements to begin with. The potential confounding role of conflict is also considered.

Other researchers have claimed that children in sole-custody arrangements are better adjusted when living with the same-sex than with the opposite-sex parent (e.g., Warshak, 1986), a variation of the family-composition perspective on the effects of divorce. Given that most sole-custody arrangements involve maternal custody, boys might therefore show more benefit than girls in a comparison of joint and maternal custody. Thus, one variable coded as a poten-

tial moderator was the proportion of boys in each study's sole-custody and joint-custody groups. It was hypothesized that the benefits of ongoing involvement with both parents would be robust, such that better adjustment for joint-custody children would be found even when controlling for a variety of participant and study characteristics as potential moderators.

Method

Sample of Studies

Studies were located through (a) electronic databases, including PsycINFO, Sociofile, and *Dissertation Abstracts International*, and (b) reference lists of relevant studies. Both narrowly focused searches (with the term "joint custody") and broader searches (combining the terms "custody" and "adjustment") were performed. The electronic databases were searched from the earliest available dates through December 1998. *Dissertation Abstracts International* was searched in an effort to incorporate as many unpublished findings as possible. Contacts with researchers in the field identified an additional study, which has since been published (Gunnoe & Braver, 2001).

To be included in this review, a study had to include groups of children living in joint legal or physical custody arrangements and in maternal or sole-custody arrangements, and had to report the statistical outcome of some test comparing psychological or behavioral adjustment between the groups. Studies that reported only qualitative descriptions of different groups, or that reported the adjustment of a joint-custody group without a sole-custody comparison group (e.g., Steinman, 1981), were therefore excluded. Similarly, studies that included both sole- and joint-custody children, and some measure of adjustment, were excluded if they did not provide any information (statistics or *p* values) on direct comparisons of the sole- and joint-custody groups (e.g., Kline, Tschann, Johnston, & Wallerstein, 1989).

Coding of Studies

For each study, the following information was coded: (a) statistics provided on adjustment for sole-custody and joint-custody children (and paternal custody and intact-family children, if included), including group sample sizes, means and standard deviations, *t* tests, *F* tests, correlations, and proportions; (b) the specific definition of joint custody used in the study (joint physical, joint legal, or undefined); (c) type of adjustment measure (described further below); (d) by whom the adjustment measure was completed; (e) ages of each group of children at the time of parental separation or divorce; (f) current ages (at time of study) of each group of children; (g) the proportion of boys in the joint-custody group and in the sole-custody group; (h) proportion of custodial mothers in the sole-custody group (usually 1.0, but less in some cases where authors did not report separate results for maternal and paternal sole-custody groups); (i) published versus unpublished status; (j) sex of first author, coded from the first name of the author; (k) sample source; (l) date of publication; (m) parental conflict in the past; and (n) parental conflict now.

Most studies included more than one codable measure of adjustment, which often represented conceptually different types of adjustment and were completed by different individuals. Effect sizes were calculated for each result, referred to here as *measure-level* effect sizes. Although this procedure meant that not all effect sizes were independent of one another, it allowed separate meta-analyses on the basis of type of adjustment measure (e.g., self-esteem) and the individual (e.g., child or parent) who completed

the measure. For each study with more than one measure-level effect size, all effect sizes were also averaged to obtain a single effect size, referred to here as *study-level* effect size (Rosenthal, 1984). Although this procedure meant that disparate measures might be averaged for some studies, it also meant that each effect size represented an independent study. This procedure allowed examination of study qualities, such as published versus unpublished status or sex of author, as potential moderators of effects. (The coding of some specific qualities is described in the following.) A total of 140 measure-level effect sizes were coded for the joint-custody and maternal custody comparisons.

For eight of the studies that were eventually included, statistics were provided that allowed calculation of effect sizes for some of the measures used, but not for others for which comparisons were reported to be nonsignificant. Rather than selectively include measures from these studies, effect sizes for these measures were set equal to zero and included in the measure-level meta-analyses and in calculation of the study-level effect sizes. This procedure provides a conservative and unbiased way to include these measures that does not favor either custody arrangement. As a result, a total of nine effect sizes estimated to be zero were included.

Definition of Joint Custody

The term *joint custody* can refer to either shared physical custody, with children spending equal or substantial amounts of time with both parents, or shared legal custody, with primary residence often remaining with one parent. Joint physical custody clearly implies ongoing close contact with both parents. However, joint legal custody implies shared decision making by the parents and ongoing, active involvement of the nonresidential parent in the child's life, even if residential custody remains primarily with one parent. Rather than exclude one form or the other from the current review, studies based on either joint physical or joint legal custody were included; study definitions were coded as "joint physical" or "joint legal" so that comparisons on the basis of definition would be possible. In 64% of the studies ($n = 21$), joint custody was defined specifically on the basis of time spent with each parent. Typically this meant at least 25% of the child's or adolescent's time was spent with each parent; schedules could and did vary widely from subject to subject and study to study, but in all of these cases involved a substantial proportion of time actually spent living with each parent. In an additional 18% of studies ($n = 6$), joint custody was self-defined by parents or was left undefined in the report of the study. For 12% of the studies ($n = 4$), joint custody groups combined joint legal and joint physical custody. Two studies (Isaacs, Leon, & Kline, 1987; Lerman, 1989) included separate joint physical custody and joint legal custody groups. However, there was only one sole-custody comparison group within each study, so comparisons of joint physical versus sole custody and joint legal versus sole custody were not independent within each study. In these two cases, measure-level and study-level effect sizes were calculated based on sole-custody comparisons with both the joint physical and joint legal groups. Only the joint physical/sole-custody comparisons were used in later analyses of measure-level effect sizes. Study-level effect sizes were computed for sole-custody comparisons with both the joint physical and joint legal groups in each study, and study-level comparisons of adjustment in joint and sole custody were computed using both (a) joint physical/sole-custody comparisons only, and (b) joint physical and joint legal comparisons with sole custody. For custody definition, studies were dummy-coded with "1" for time-based joint physical custody, and "2" for joint legal custody or samples that left joint custody undefined or combined the two types.

Types of Adjustment Measures

Because of the possibility that differences between sole and joint custody children might be greater on some dimensions of adjustment (e.g., family relations) than others (e.g., measures of general adjustment), measures were categorized into the following groups: general adjustment, emotional adjustment, behavioral adjustment, self-esteem, family relations, academic performance, and divorce-specific adjustment.

General adjustment. This category included results reported for broad-based measures of adjustment covering a range of behavioral and emotional problems, including the Child Symptom Checklist; the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983); the Personality Inventory for Children, Adjustment subscale (Wirt, Lachar, Klinedienst, & Seat, 1984); the California Test of Personality (California Test Bureau, 1950); the Health Resources Inventory (Gesten, 1976); the Adaptive Behavior Inventory for Children (Mercer, 1979, ch. 15); the Louisville Behavior Checklist (Miller, 1977); and scales or items created by the authors included in the meta-analysis.

Behavioral adjustment. This category included measures specifically assessing behavioral problems, including the Conduct Disorder subscale of the Adolescent Multiphasic Personality Inventory (MPI; Duthie, 1985); the Behavior Problem Checklist (Quay & Peterson, 1979); the Externalizing subscale of the CBCL (when scale scores for the CBCL were reported rather than total scores), the Externalizing subscale of the Youth Self-Report Inventory (Achenbach, 1991), and various author-created scales for rating behavioral problems.

Emotional adjustment. This category included measures intended to assess emotional symptoms and reactions, including the Neuroticism subscale of the Adolescent MPI; the Internalizing subscale from the CBCL; the Children's Depression Inventory (Kovacs, 1981); the Revised Children's Manifest Anxiety Inventory (Reynolds & Richmond, 1985); the Children's Social Desirability Questionnaire (Crandall, Crandall, & Katkovsky, 1965); the Draw-A-Person Test (Koppitz, 1966); the Differential Emotions Scale (Boyle, 1984); the House-Tree-Person Test (Buck, 1977); Locus of Control (Nowicki & Strickland, 1973); the Internalizing subscale of the Youth Self-Report Inventory; and various author-written items related to emotional problems and adjustment.

Self-esteem. This category included the California Attitude Survey; the Self-Esteem subscale of the Children's Personality Questionnaire (R. Porter & Cattell, 1968); the Coopersmith Self-Esteem Inventory (Coopersmith, 1967); the Culture-Free Self-Esteem Inventory; the Inferred Self-Concept Scale (Hughes, 1984); the Perceived Competence Scale for Children (Harter, 1982); the Piers-Harris Children's Self-Concept Scale (Piers, 1984; Piers & Harris, 1964); the Tennessee Self-Concept Scale (Fitts, 1965); and author-written items or composites of self-esteem items.

Family relations. This category included the Child Report of Parental Behavior Inventory (Schaefer, 1965); items from the Cornell Parent Behavior Inventory (Devereaux, Bronfenbrenner, & Suci, 1962); the Draw-A-Family Test (Isaacs et al., 1987); the Family Adaptability and Cohesion Evaluation Scales (FACES; Olson, 1986); the Family Relations Test (Anthony & Bene, 1957); the Kinetic Family Drawings Test (Burns & Kaufman, 1970); the Kvebaek Family Sculpture Test (Cromwell, Fournier, & Kvebaek, 1980); the Loyalty Conflict Assessment Test (Shiller, 1986); the Parental Acceptance and Rejection Questionnaire (Rohner, 1980); the Stepfamily Adjustment Scale (Crosbie-Burnett, 1991); and various author-created scales.

Academic/scholastic. This category included one measure specific to classroom behavior, the Classroom Adjustment Rating Scale (Lorion, 1975), and measures related to school performance

or intelligence such as grade-point average, IQ, and school attendance.

Divorce-specific. This category included the Children's Attitudes Toward Parental Separation Inventory (CAPSI; Berg, 1982); Children's Beliefs about Parental Divorce (CBAPD; Kurdek & Berg, 1987); the Structured Divorce Questionnaire (Kurdek & Siesky, 1980); the Divorce Experiences Scale for Children (Wolchik, Braver, & Sandler, 1985), and various author-written items specifically concerning adjustment to the divorce, such as parental ratings of whether the child was harmed by or benefited from the divorce, and positive versus negative experiences in the divorce.

Sample Source

There were five different types of sample sources identified. First were court and divorce records, in which researchers identified joint-custody families by examining court records of divorce and custody proceedings in specific jurisdictions. Second were convenience samples, in which researchers identified and recruited participants through such means as newspaper and media advertisements, word of mouth, and personal contacts. Third were school-based samples, in which participants were recruited within particular schools or school systems. Fourth were national samples (only one, Donnelly & Finkelhor, 1992). And finally, clinical samples of families undergoing counseling or other mental health services related to the divorce (only two, Johnston, Kline, & Tschann, 1989; Walker, 1985).

Conflict

Samples were also coded for measures of current conflict between parents (conflict now) and past conflict between parents (conflict then). Past conflict typically involved assessments of conflict during the marriage or around the time of separation. Measures of current conflict were coded from 14 studies and included such measures as the Straus Conflict Tactics Scale (Straus, 1979); the O'Leary-Porter Overt Hostility Scale (B. Porter & O'Leary, 1980); Ahrons's scales for various dimensions of parental conflict, communication, and support (Ahrons, 1979, 1981, 1983); and various author-created items or scales for parents (and sometimes children) to report on such constructs as discord, hostility, cooperation, and conflict over custody or other issues. Measures of past conflict were coded from 5 studies and included the Locke-Wallace Marital Adjustment Scale (Locke & Wallace, 1959); the O'Leary-Porter Overt-Hostility Scale; the Straus Conflict Tactics Scale; and various author-created items or scales for parents or children to rate parental conflict in the past.

Analysis

Data analysis was carried out using DSTAT software for meta-analysis (Johnson, 1989). This program uses the Hedges and Olkin (1985) methods for meta-analysis for most calculations. For modeling of study qualities that are continuous rather than categorical variables, however, the program uses Rosenthal's (1984) techniques. This difference is reflected in the statistics reported for modeling of study qualities.

Results

Study Characteristics

A total of 33 studies, 11 published and 22 unpublished, were included (21 of the unpublished studies were doctoral

dissertations). The 33 studies contributed a total of 140 measure-level effect sizes. These studies dated from 1982 to 1999. The combined sample size across studies was 1,846 sole-custody and 814 joint-custody children. Over one third ($n = 12$) were convenience samples drawn from various sources such as child-care centers, single-parent groups, and word of mouth. Court records of divorce filings and litigation were the source of 11 samples: 6 were drawn from school populations; 2 from clinical samples; 1 from highly conflicted parents (Johnston et al., 1989); 1 from parents seeking counseling at a social services agency (Walker, 1985); and 1 from a national telephone survey (Donnelly & Finkelhor, 1992). Only 6 had a male first author, whereas 26 had a female first author (author sex could not be determined for one study, due to an ambiguous name; see Table 1).

Adjustment in Joint Versus Sole Custody

First, the study-level effect sizes for joint versus sole custody were analyzed (this analysis included only the joint physical custody effects for Isaacs et al., 1987, and Lerman, 1989, so there was only one effect size for every study). Across the study-level effect sizes, joint-custody children scored significantly higher on adjustment measures than sole-custody children, $d = .23$ ($SD = .27$, 95% confidence interval (CI) = .14-.32), corresponding to an r of .114. According to the guidelines described by Cohen (1988), this effect size is slightly greater than what would be considered a small effect size ($d = .20$). The effect sizes were not significantly heterogenous, $Q(32) = 27.67$, $p = .62$, meaning that they were statistically consistent across studies. As noted earlier, the sole-custody groups were either exclusively maternal custody or primarily maternal custody with a small minority of paternal custody cases; a separate analysis (see the following) was conducted to compare joint and maternal custody children.

A second overall analysis was conducted using both the joint legal and joint physical samples from Isaacs et al. (1987) and Lerman (1989), so each of these studies contributed two effect sizes. As noted previously, each of these studies had only one sole-custody comparison group, so the study-level effect sizes for joint physical and joint legal custody were not truly independent of each other. Results were nearly identical to the first analysis, $d = .26$ ($SD = .28$, 95% CI = .17-.34), and effect sizes were not heterogenous, $Q(34) = 32.06$, $p = .86$.

Because joint physical and joint legal custody may differ greatly in terms of time spent with each parent (with only the former clearly involving substantial amounts of time spent living with each parent), separate study-level analyses were conducted to compare joint physical custody and joint legal custody groups to sole-custody groups. In both cases, the joint-custody groups were better adjusted. For joint physical custody versus sole custody ($n = 20$ studies), $d = .29$ ($SD = .30$, 95% CI = .14-.42), and effect sizes were not significantly heterogenous, $Q(19) = 18.80$, $p = .53$. For joint legal custody versus sole custody ($n = 15$ studies, including the joint legal samples from Isaacs et al., 1987, and Lerman, 1989), $d = .22$ ($SD = .24$, 95% CI = .10-.34),

and effect sizes were again not significantly heterogenous, $Q(14) = 12.50$, $p = .64$. Without Isaacs et al. and Lerman, the effect size for the joint legal comparison was smaller but still significant, $d = .15$ ($SD = .21$, 95% CI = .01-.28), $Q(12) = 6.40$, $p = .93$. A direct contrast of the mean effect sizes for joint physical and joint legal samples revealed that they did not significantly differ from each other either including or excluding the Isaacs et al. and Lerman samples, $\chi^2 = 0.69$, $p = .40$, and $\chi^2 = 2.50$, $p = .12$, respectively. Based on these findings, the joint physical and joint legal custody comparisons to sole custody were combined for all further analyses.

Comparisons Based on Study-Level Effect Sizes

Modeling of both categorical and continuous study qualities was performed to determine whether specific qualities of studies or of samples moderated the difference between sole and joint custody. Although effect sizes were not significantly heterogenous, this does not necessarily disallow examination of possible moderators of effect sizes. Rosenthal (1995) stated that contrasts can and should be computed among obtained effect sizes regardless of heterogeneity, because they may still reveal significant results and provide useful information. These analyses included only the joint physical custody effect size for Isaacs et al. (1987) and Lerman (1989), so each study was represented only by a single effect size.

Published and unpublished studies did not differ significantly in effect sizes, $QB(1) = 0.09$, $p = .76$. Sex of first author also did not moderate effect sizes, $QB(1) = 0.19$, $p = .66$. The proportions of boys in sole-custody groups and in joint-custody groups were not separately related to effect sizes, $Z = 1.39$, $p = .17$, and $Z = 1.32$, $p = .19$, respectively. Age at time of separation/divorce for sole-custody and joint-custody groups also did not relate to effect sizes, $Z = 0.31$, $p = .75$, and $Z = 0.34$, $p = .74$, respectively; neither did current age of child/adolescent for sole-custody and joint-custody groups, $Z = -0.44$, $p = .66$ and $Z = -0.33$, $p = .74$, respectively. The proportion of mothers in the sole-custody groups also did not affect the relationship between custody and adjustment, $Z = 0.59$, $p = .55$.

Importantly, sample source was unrelated to effect sizes, $QB(4) = 8.15$, $p = .09$ (studies not reporting sample source were excluded from this analysis). Effect sizes in each of the categories with more than one effect size (court, school, and convenience samples) were not significantly heterogenous (only the national sample category had a single effect size; see Donnelly & Finkelhor, 1992, Table 1). When examined separately, overall effect sizes were significantly different from zero for convenience samples, $d = .28$ ($SD = .27$, 95% CI = .11-.45); samples based on court records, $d = .15$ ($SD = .08$, 95% CI = .02-.29); and samples obtained from in-school students, $d = .47$ ($SD = .29$, 95% CI = .24-.70). The combined effect size for the two clinical samples did not differ from zero, $d = .18$ ($SD = .49$, 95% CI = -.19-.56), and the single national sample had a negative effect size, indicating better adjustment for sole-custody children.

Table 1
Study Variables and Study-Level Effect Sizes

Author	Author sex	Sample size		Definition ^a	Proportion boys		Proportion mothers ^b	Current age		Age at divorce		Published	Study-level effect size
		Joint	Sole		Joint	Sole		Joint	Sole	Joint	Sole		
Bowman (1983)	F	28	54	2			1.00	8.6	9.0			N	.209
Bredfeldt (1985)	M	20	20	1	.75	.65	1.00	9.1	9.7	4.2	2.5	N	.050
Buchanan et al. (1991)	F	52	384	1	.51	.51	.78	14.3	14.3	9.8	9.8	Y	.174
Cowan (1982)	F	20	20	1	.50	.50	1.00	10.5	10.5	8.2	7.8	N	.193
Crosbie-Burnett (1991)	F	26	52	2	.44	.44	NA	15.0	15.0			Y	.067
Donnelly and Finkelhor (1992)	F	19	141	2			NA	12.4	12.4			Y	-.101
Glover and Steele (1989)	F	8	8	1	.63	.38	NA	10.6	11.1	8.6	9.0	Y	.665
Granite (1985)	F	20	19	2	.65	.48	.50	10.5	11.0	7.5	8.1	N	.005
Gunnoe & Braver (2001)	F	28	51	2	.61	.49	1.00	10.9	10.9	7.9	7.9	N	.176
Hendrickson (1991)	M	10	10	1	.63	.63	1.00	10.5	10.5	15.2	15.2	N	.455
Isaacs et al. (1987)	F	41	117	1			.71	10.5	10.5	5.8	5.8	Y	.609
joint physical		44	117	2									
joint legal		35	53	1	.50	.50	1.00	6.5	6.5	4.5	4.5	Y	.027
Johnston et al. (1989)	F	16	22	1	.44	.55		8.5	8.5	8.3	8.3	N	.284
Karp (1982)	F	17	13	1	.41	.38		9.9	9.8	4.7	4.8	N	.040
Kaufmann (1985)	F	40	40	1	.48	.50	.90	12.0	12.0	5.5	5.5	N	.101
Lakin (1994)	M	20	39	2	.45	.48	1.00	7.5	7.5	4.0	4.0	N	-.216
Lee (1993)	NA	20	39	2	.43	.43	1.00	9.5	9.6	5.9	5.7	N	.977
Lerman (1989)	F	30	30	1									
joint physical		30	30	1									
joint legal		32	54	2	.53	.48	.59	11.4	11.8	9.8	8.6	N	.132
Livingston (1984)	F	25	34	1			1.00	9.5	12.0	6.0	8.2	Y	.151
Luepnitz (1982)	F	32	26	1	.59	.46	.88	12.5	12.5			N	.068
Mann (1984)	M	8	64	2	.61	.61	.92	8.1	8.1			N	.276
Mensink (1987)	M	20	20	1	.45	.45		9.5	9.5			N	.246
Noonan (1985)	F	20	20	2	.50	.50		10.3	10.5	7.1	4.4	N	.340
Nunan (1980)	F	20	20	1	1.00	1.00		9.5	9.5			N	.688
Pojman (1981)	M	21	21	1	.48	.48	1.00	10.3	10.5	5.0	5.0	N	.220
Rockwell-Evans (1991)	F	20	20	1	1.00	1.00	1.00	8.5	8.5	5.0	5.0	Y	.674
Shiller (1986)	F	32	169	2	.52	.52	.83	16.5	16.5	6.8	6.8	Y	.114
Silitsky (1996)	M	15	30	2	.47	.50	1.00	10.1	10.0	6.5	5.6	N	.652
Spence (1992)	F	19	26	2								N	.253
Vela-Trujillo (1996)	F	12	15	1								N	.724
Walker (1985)	F	17	37	1								N	.038
Warren (1983)	F	10	10	1	.50	.50	.50	9.9	9.9	12.3	12.3	N	.702
Welsh-Osga (1982)	F	10	10	1	.55	.39	1.00	11.1	11.7	9.9	10.5	Y	.251
Wolchik et al. (1985)	F	44	89	2								Y	

Note. Mean weighted effect size, $d = .23$; mean unweighted effect size (each study = 1), $d = .27$; median effect size, $d = .209$ (Bowman, 1983). F = female; M = male; N = not published; Y = published. NA = not available. Detailed information on the measure-level effect sizes from each study are available from the author.

^a A code of 1 means joint custody was defined on the basis of time spent with each parent (joint physical custody); a code of 2 refers to joint legal custody, mixed samples, or undefined. ^b The proportion of mothers with physical custody in the sole custody group.

Comparisons Based on Measure-Level Effect Sizes

Measure-level effect sizes were used for meta-analysis of the effects of type of adjustment measure and identity of the person evaluating the child's adjustment. The measure-level effect sizes obtained for this analysis are displayed in stem-and-leaf format in the Appendix.

Type of adjustment measure. Type of measure did not significantly moderate effect sizes, $QB(6) = 4.85, p = .56$. For all categories of adjustment except academic adjustment, joint-custody children were better adjusted than sole-custody children: for general (broad) measures of adjustment ($n = 24$), $d = .29$ ($SD = .41, 95\% CI = .18-.41$); for family relations ($n = 41$), $d = .23$ ($SD = .42, 95\% CI = .14-.32$); for self-esteem ($n = 22$), $d = .30$ ($SD = .47, 95\% CI = .17-.43$); for emotional adjustment ($n = 20$), $d = .21$ ($SD = .38, 95\% CI = .11-.32$); for behavioral adjustment ($n = 12$), $d = .25$ ($SD = .18, 95\% CI = .12-.38$); and for divorce-specific adjustment ($n = 14$), $d = .13$ ($SD = .42, 95\% CI = .01-.25$).

For several categories of adjustment measures, the homogeneity statistic Q indicated that the effect sizes were significantly heterogeneous. The largest outlier for each of these categories was removed and the homogeneity rechecked; the procedure was repeated if effect sizes remained nonhomogeneous. The DSTAT program identifies the largest outlier as that effect size which, if removed, would reduce the homogeneity statistic Q by the largest amount. Measures of general adjustment were rendered homogenous by removal of two outliers, resulting in an adjusted $d = .29$ ($95\% CI = .18-.41$). Family adjustment effect sizes were homogenous after removal of one outlier, adjusted $d = .19$ ($95\% CI = .09-.28$). Academic adjustment effects also were homogenous after removal of a single outlier, adjusted $d = .06$ ($95\% CI = -.17+.30$), as were divorce-specific effects, adjusted $d = .19$ ($95\% CI = .07-.32$).

Person completing measure. The identity of the person completing the adjustment measure did not significantly moderate effect sizes, $QB(5) = 6.74, p = .24$. For all categories of persons completing the adjustment measure, joint custody children were better adjusted than sole-custody children, with the 95% confidence interval excluding zero: for child-completed measures ($n = 81$), $d = .19$ ($SD = .44, 95\% CI = .13-.25$); for mother-completed measures ($n = 18$), $d = .32$ ($SD = .39, 95\% CI = .20-.45$); for father-completed measures ($n = 17$), $d = .30$ ($SD = .18, 95\% CI = .12-.48$); for measures completed by an unspecified parent ($n = 17$), $d = .19$ ($SD = .31, 95\% CI = .07-.31$); for teacher-completed measures ($n = 9$), $d = .40$ ($SD = .37, 95\% CI = .16-.64$); and for measures completed by clinicians ($n = 7$), $d = .27$ ($SD = .45, 95\% CI = .07-.46$).

The Role of Conflict

Effect sizes were calculated comparing joint-custody and sole-custody groups on the basis of conflict now ($n = 14$ studies) and conflict in the past ($n = 5$ studies). The remaining studies did not report conflict data. For current

conflict, joint-custody groups reported significantly less across the 14 studies, $d = .24$ ($SD = .58, 95\% CI = .11-.37$). For past conflict, joint-custody groups again reported less across the 5 studies, $d = .33$ ($SD = .20, 95\% CI = .10-.55$). Next, both past and current conflict were tested as moderators of the adjustment difference between joint and sole custody. Neither was a significant predictor of the joint-custody advantage in adjustment (for past conflict, $Z = 0.505, p = .61$; for current conflict, $Z = 1.349, p = .18$). One problem that may have obscured a potential relationship was the relatively small proportion of studies that actually provided codable data on group differences in conflict; for past conflict in particular, only 5 studies allowed such a comparison.

Adjustment in Joint Versus Paternal Custody

A total of 8 studies included paternal custody groups composed entirely of custodial fathers (Granite, 1985; Hendrickson, 1991; Johnston et al., 1989; Luepnitz, 1982; Mensink, 1987; Spence, 1992; Warren, 1983; Welsh-Osga, 1982). Separate groups of custodial mothers from these studies were included in the joint- versus sole-custody comparisons already examined. Because of the relatively small number of samples, analyses were conducted based on study-level effect sizes only, and study qualities were not analyzed as moderators of this comparison. As with sole custody, these effect sizes were obtained by calculating measure-level effect sizes and then averaging for each study (there were a total of 40 effect sizes across all 8 studies). Overall, differences in adjustment were in the direction of better adjustment for joint-custody children, $d = .20$, but this difference was nonsignificant ($95\% CI = -.06-.46$). Effect sizes were not significantly heterogeneous, $Q(7) = 5.26, p = .63$.

Adjustment in Joint Custody Versus Intact Families

A total of 8 studies compared joint-custody children with intact-family children, with 45 effect sizes (Glover & Steele, 1989; Hendrickson, 1991; Ilfeld, 1989; Karp, 1982; Mensink, 1987; Pojman, 1981; Spence, 1992; Welsh-Osga, 1982). Again, average effect sizes were computed for each study and comparisons were based on the study-level effects. As with the joint-custody/paternal custody comparison, study qualities were not analyzed as moderators of the adjustment comparisons. There was no difference between joint-custody and intact-family children, $d = -.0002$ ($95\% CI = -.027-.027$). Again, the effect sizes were not significantly heterogeneous, $Q(7) = 5.34, p = .62$.

Discussion

Based on these results, children in joint custody are better adjusted, across multiple types of measures, than children in sole (primarily maternal) custody. This difference is found with both joint legal and joint physical custody and appears robust, remaining significant even when testing various categorical and continuous qualities of the research studies as moderators. For measure-level effect sizes, the effect

sizes do not significantly differ across types of adjustment measures. This finding is consistent with the hypothesis that joint custody can be beneficial to children in a wide range of family, emotional, behavioral, and academic domains. Similarly, Amato and Gilbreth's (1999) meta-analysis of non-resident father involvement showed that closeness to the father and authoritative parenting by the father were positively associated with behavioral adjustment, emotional adjustment, and school achievement. Joint-custody children showed better adjustment in parental relations and spent significant amounts of time with the father, allowing more opportunity for authoritative parenting. The findings for joint legal custody samples indicate that children do not actually need to be in joint *physical* custody to show better adjustment, but it is important to note that joint legal custody children typically spent a substantial amount of time with the father as well. Importantly, a causal role for joint custody cannot be demonstrated because of the correlational nature of all research in this area.

The effect size did not significantly vary according to the identity of the person completing the adjustment measure, indicating that on average mothers, fathers, children, teachers, and clinicians, all rated child adjustment as better in joint-custody settings. The ratings by mothers are notable because mothers might perceive joint custody as a loss of expected control as primary custodians and be less likely to perceive children as benefiting. Some authors have claimed that mothers are the primary "losers" in joint-custody situations (Kuehl, 1989). However, mothers appear just as likely as other evaluators to perceive joint custody as beneficial to their children's adjustment.

For study-level effect sizes, the better adjustment in joint custody did not vary according to the age of the children in either the sole- or joint-custody groups. Although the period from early childhood through adolescence is marked by many developmental tasks and changes, it may be that ongoing positive involvement with both parents at any of these ages can prove beneficial. The effect sizes also did not significantly vary according to characteristics of the study, such as unpublished versus published status. Unlike research literature in some areas, the literature on child adjustment in different custody arrangements does not show a bias toward larger effect sizes in published studies.

Notably, the source of the sample (court, convenience, or school-based) did not moderate effect sizes either. The effect size for the single national sample (Donnelly & Finkelhor, 1992) was not significantly different from zero, but this telephone survey included only three questions about parent-child relationships only. The two clinical samples also did not show an advantage for joint custody, but at least one of these (Johnston et al., 1989) was specifically selected for unusually high levels of parental conflict. Further research with a variety of sample types, especially national samples if possible, is clearly needed.

Given the relevance of parental conflict to child adjustment, the fact that lesser conflict in joint-custody groups did not significantly predict the better adjustment of children in joint custody may seem puzzling. The result may be an artifact of the small amount of variance found on this measure. Effect sizes for joint-custody/sole-custody conflict

comparisons tended to be small, as shown previously, so the small differences found when comparing groups may have obscured a genuine relationship between parental conflict and child adjustment within groups. For past conflict, the small number of studies where such a comparison was possible ($n = 5$) may also have limited power to detect a significant relationship. Future research on custody and adjustment should measure, and statistically control for, the effects of level of parental conflict.

It is also surprising that the majority of the studies reviewed did not attempt to statistically control for parental conflict levels, or even directly compare levels of conflict between joint- and sole-custody parents. In those studies that did examine conflict, joint-custody couples reported less conflict at the time of separation or divorce. This is consistent with the argument that joint-custody couples are self-selected for low conflict and that better adjustment for their children may reflect this lack of conflict; parental conflict remains an important confound in research comparing adjustment in different custody settings. However, some research that has controlled for preexisting levels of conflict continues to show an advantage for child adjustment in joint custody (Gunnoe & Braver, 2001). The fact that joint-custody couples also reported less current conflict is important because of the concern that joint custody can be harmful by exposing children to ongoing parental conflict. In fact, it was the sole-custody parents who reported higher levels of current conflict.

It is also possible that direct comparisons of conflict between joint- and sole-custody parents may not be especially meaningful. King and Heard (1999) analyzed the relationships between father contact, parental conflict, and mother satisfaction in divorced families and found no simple, direct relationship among these variables. Conflict was highest at middle levels of visitation and lower when father contact was very high (as in joint physical custody) or very low. Mother satisfaction was higher at the most and least frequent levels of visitation, and highest with high levels of paternal contact and low levels of conflict. Conflict did not moderate or mediate the relationship between father contact and mother satisfaction. King and Heard argue that some mothers may be grateful for ongoing father contact even if some conflict occurs. Low conflict could signal either good parental relations or very little or no father contact (due to maternal desires, father withdrawal, etc.).

The effect size indicating better adjustment of joint-custody versus paternal custody children was statistically nonsignificant, failing to support the hypothesis of better adjustment for joint-custody children. However, the effect was almost the same in magnitude as the effect size favoring joint over maternal/sole custody. With only 8 studies for the joint versus paternal comparison, but 33 for the broader joint- versus sole-custody comparison, lack of statistical power may have been a problem. Given the relatively small magnitude of the apparent effect size, if joint-custody and paternal custody children really do differ in adjustment, more studies with larger samples may be needed to detect the effect at the level of statistical significance.

As hypothesized, joint custody and intact family children did not differ in adjustment. This finding is consistent with

the argument made by some researchers that joint custody is beneficial because it provides the child with ongoing contact with both parents. At the same time, as mentioned earlier, selection bias cannot be ruled out. Parents who have better relationships prior to, or during, the divorce process may self-select into joint custody, such that quality of parental relationship is confounded with custody status. The lower level of conflict in joint-custody families, relative to sole-custody families, is consistent with this alternative hypothesis. Further research that controls for parental conflict prior to, during, and after divorce may be the only practical way to compensate for this possibility. Another possibility for controlling selection bias might be separate comparisons of sole custody with voluntary and court-imposed joint custody.

~ Implications for Application and Public Policy

A major shortcoming of many of the studies reviewed was inadequate reporting of statistical results; many did not provide basic information on means and standard deviations of adjustment measures in the different custody groups, even when *t* tests or other statistical tests were reported and indicated significant differences. In some cases where differences were reported to be nonsignificant, means were reported but no standard deviations, making it necessary to estimate standard deviations from published norms for the measures used. Some studies failed to report any useful statistics at all, simply stating that there were no significant differences between groups (e.g., Ilfeld, 1989), which required that effect sizes be set to zero to allow inclusion of the study. Future researchers need to report statistical findings more carefully to make sure their results are useful for quantitative as well as qualitative reviews.

Larger sample sizes would also be valuable in future research. The effect size favoring joint custody in the current meta-analysis ($d = .23$) is just above what Cohen (1988) labeled a small effect size. Statistical significance is a function of both the effect size, or magnitude, of the phenomenon being studied and the sample size used in the research. Thus, the small size of many of the joint- (and sole-) custody groups in the research to date increases the risk of Type II error (failure to detect real differences). Of the 33 studies included in the meta-analysis, 23 had joint-custody groups and 16 had sole-custody groups with fewer than 30 participants. Especially in studies involving relatively small numbers of participants, researchers should report basic data for each group on each adjustment measure to help reviewers assess the magnitude of effects.

A further need exists for longitudinal research to assess the relative advantage of joint over sole custody across time. More follow-up studies reporting on the same sample over time, beyond adolescence and into adulthood, are needed. In general, researchers have found that as adults, children from divorced family backgrounds continue to have more difficulties than those from intact-family backgrounds (Amato & Keith, 1991a). Comparison of college or community samples of adults from joint- versus sole-custody backgrounds would be especially useful in determining whether joint-custody benefits extend into adulthood, because most

of the research to date has been limited to convenience samples or samples from court records.

The current results appear favorable to advocates of joint custody (e.g., Bender, 1994) who favor a presumption of joint custody in divorce cases. By the early 1990s, most states had introduced laws making joint custody available as an option, or even as a rebuttable presumption, in divorce cases (Bruch, 1992). However, current research suggests that judges in some areas continue to show a strong preference for maternal custody and tend to oppose joint physical custody (Stamps, Kunen, & Rock-Facheux, 1997). It is important to recognize that the findings reported here do not demonstrate a causal relationship between joint custody and better child adjustment. However, the research reviewed here does not support claims by critics of joint custody that joint-custody children are likely to be exposed to more conflict or to be at greater risk of adjustment problems due to having to adjust to two households or feeling "torn" between parents. Joint-custody arrangements (whether legal or physical) do not appear, on average, to be harmful to any aspect of children's well-being, and may in fact be beneficial. This suggests that courts should not discourage parents from attempting joint custody.

It is important to recognize that the results clearly do not support joint custody as preferable to, or even equal to, sole custody in all situations. For instance, when one parent is clearly abusive or neglectful, a sole-custody arrangement may be the best solution. Similarly, if one parent suffers from serious mental health or adjustment difficulties, a child may be harmed by continued exposure to such an environment. Also, some authors have proposed that in situations of high parental conflict, joint custody may be detrimental because it will expose the child to intense, ongoing parental conflict (e.g., Johnston et al., 1989). However, this last argument may be applicable mainly to extremes of parental conflict. Some research indicates that joint custody may actually work to reduce levels of parental conflict over time, meaning that whatever risk exposure to parental conflict involves will be reduced (Bender, 1994).

Results of custody and adjustment studies need to be communicated more widely to judges, lawyers, social workers, counselors, and other professionals involved in divorce counseling and litigation, as well as divorce researchers in general. Such communication could lead to better-informed policy decisions based on research evidence, and better-informed decision making in individual cases. There continues to be an urgent need for additional research on child custody and adjustment that corrects problems such as small sample sizes, inadequate control of confounding variables, and inadequate reporting of statistical results. However, the available research is consistent with the hypothesis that joint custody may be beneficial to children, and fails to show any clear disadvantage relative to sole custody.

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Appendix

Stem-and-Leaf Display of Measure-Level
Effect Sizes

Extremes: 1.36, 2.50
1.2 8
1.1 5 9
1.0 2 9
0.9 7 8 9
0.8 2 3 4 4 6
0.7 0 2 2 8 8
0.6 0 1 7 8
0.5 1 1 1 3 4 5 5 6 8
0.4 0 1 2 2 3 5 5 5 6 6 7 8 8 9
0.3 0 2 4 6 7 7 7 9 9
0.2 0 0 0 1 1 2 3 3 4 4 4 4 4 4 4 7 7 7 7 9
0.1 0 0 0 2 2 2 3 3 4 4 6 6 6 7 7 7 8 8
0.0 0 0 0 0 0 0 0 0 0 1 2 2 4 4 4 5 6 6 7 8 9
-0.0 1 4 4 6 7
-0.1 0 3 4 6
-0.2 4 5 6 9
-0.3 0 0 0 2 6 8
-0.4 3
-0.5 1 4
Extremes: -0.74, -1.13

High: 2.5
75 th percentile: 0.48
Median: 0.23
25 th percentile: 0.01
Low: -1.13

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