

Parental Caregiving and Child Externalizing Behavior in Nonclinical Samples: A Meta-Analysis

Fred Rothbaum and John R. Weisz

A meta-analysis of 47 studies was used to shed light on inconsistencies in the concurrent association between parental caregiving and child externalizing behavior. Parent-child associations were strongest when the measure of caregiving relied on observations or interviews, as opposed to questionnaires, and when the measure tapped combinations of parent behaviors (patterns), as opposed to single behaviors. Stronger parent-child associations were also found for older than for younger children, and for mothers than for fathers. Finally, externalizing was more strongly linked to parental caregiving for boys than for girls, especially among preadolescents and their mothers. The meta-analysis helps account for inconsistencies in findings across previous studies and supports theories emphasizing reciprocity of parent and child behavior.

Externalizing behavior is the most frequently investigated type of child problem behavior in studies of parent-child relations. Many theories of child socialization posit a close association between parental caregiving and child externalizing behavior (see Hetherington & Martin, 1986; Maccoby & Martin, 1983; Patterson, 1980). A close association is assumed by those who emphasize parents' influence on children (e.g., Baumrind, 1989; Hoffman, 1970; Rohner, 1986) as well as by those who emphasize children's influence on parents (e.g., Anderson, Lytton, & Romney, 1986; Bell & Chapman, 1986). Yet, two major reviews of the empirical evidence indicate that the association obtained is inconsistent from study to study and generally low in magnitude (e.g., Maccoby & Martin, 1983; Parke & Slaby, 1983).¹

Neither of the reviews just mentioned used quantitative procedures for pooling findings mathematically. In this article, we report a meta-analysis of evidence linking parental caregiving and child externalizing (i.e., aggressive, hostile, and noncompliant) behavior. Our primary questions were as follows: (a) Which type of measure (questionnaire, interview, or observation) of caregiving yielded the strongest caregiving-externalizing association? (b) Which parental behaviors or combinations of behaviors best predicted child externalizing behavior? and (c) Did stronger associations emerge with samples of older or younger children, with samples of boys or girls, and with samples of

mothers or fathers? We also examined other variables, including type of externalizing behavior, source of sample (e.g., school or community), setting in which externalizing was assessed (home or school), and family characteristics (e.g., socioeconomic status [SES]), that may influence the association between caregiving and externalizing behavior. These variables have not been systematically examined in previous reviews. For most of these variables, the assumption has been that they are not relevant to the caregiving-externalizing association or there is controversy about their relevance (Maccoby & Martin, 1983; Parke & Slaby, 1983; Radke-Yarrow, Zahn-Waxler, & Chapman, 1983). By focusing on these variables, we hoped to shift from a concern with the strength of the association between caregiving and externalizing to a concern with how they are associated with one another.

If, as we suspect, the caregiving-externalizing association depends on some of these variables, clues as to sources of inconsistency in prior findings will be revealed. For example, effects may be weaker with questionnaire measures than with other types of measures, but this difference in effect size may be difficult to detect without the quantitative analysis used here. The findings may also shed light on processes underlying the parent-child relationship. For example, findings of stronger parent-child associations for older than for younger children would suggest that reciprocity between parent and child may be a cumulative process that takes years to develop.

We believe that the time is ripe for a meta-analysis because the field is in a transitional stage in the development of theoretical frameworks for understanding parent-child relations (cf. Maccoby, 1992). The goal here is to contribute to a framework linking caregiving and externalizing by pointing to measures, developmental periods, and samples for which the caregiving-externalizing association is robust and those for which the association is weak or nonexistent.

Fred Rothbaum, Department of Child Study, Tufts University; John R. Weisz, Department of Psychology, University of California at Los Angeles.

Preparation of this article was supported by grants from Tufts University. We gratefully acknowledge the assistance of Martha Pott, Ruth Bucatinsky, and Aimee Conrad in gathering data, and we thank Ann Easterbrooks and Karen Rosen for their comments on an earlier draft. We also wish to thank David Jacobowitz for providing helpful data, and we thank the several reviewers who made suggestions for changes.

Correspondence concerning this article should be addressed to Fred Rothbaum, Department of Child Study, Tufts University, Medford, Massachusetts 02155.

¹ As noted by Maccoby and Martin (1983, p. 82), "the relationships [between parent and child behavior] that have appeared are not large, if one thinks in terms of the amount of variance accounted for."

Type of Measure of Parental Caregiving

One of the first issues we faced in selecting studies was whether to include those that relied exclusively on questionnaire measures of parental caregiving. Holden and Edwards (1989) reviewed the problems associated with questionnaire measures, such as the ambiguous nature of the items and the lack of opportunity for respondents to clarify the questions or explain the social reasoning behind their answers. These authors concluded that questionnaires suffer from "marginally acceptable levels of reliability and questionable validity" (p. 29). Ultimately, we decided to include questionnaire studies to test whether they (a) yield weaker findings than do studies using other measures of caregiving and (b) mask other effects examined in this meta-analysis. That is, are smaller differences obtained between age groups, gender groups, or other grouping variables when questionnaire-based studies are included versus when they are not included?²

Parental Caregiving Variables and Patterns of Caregiving

Numerous parental caregiving variables have been studied in relation to children's externalizing behavior. Here we examined the parental behaviors (e.g., approval) that have been most frequently linked to externalizing (a complete description of the variables and the criteria for inclusion is provided later). This meta-analysis provides the first systematic attempt of which we are aware to determine whether there are differences in the strength of association between each of these variables and child externalizing.

We also explored whether caregiving measures assessing multiple variables better predicted child externalizing behavior than did caregiving measures of single variables. Several authors have hypothesized that there are caregiving variables that, in isolation from one another, have limited predictive value but that in combination may be highly predictive of child behavior (e.g., Baumrind, 1989; Hetherington & Martin, 1986; Parke & Slaby, 1983; Sroufe, Matas, & Rosenberg, 1981; Staub, 1979). Despite these hypotheses regarding the virtues of multiple variable measures, most studies have assessed only one variable, and there has been no systematic effort of which we are aware to compare the predictive strength of measures assessing single versus multiple variables.

Age of Child

We are not aware of any reviews that have examined age-related differences in the caregiving-externalizing association. Two competing hypotheses are explored here.

The first hypothesis was that parent-child associations may be strongest in early childhood when there are fewer competing socialization influences (e.g., teachers and peers). The relative exclusivity of parental influence at young ages may result in child behavior that more faithfully reflects parent behavior. In addition, the great amount of time and energy that parents devote to interacting with their young children (Pleck, 1982; Whiting & Edwards, 1988) may bring parents' behavior more in line with the child's (Bell & Chapman, 1986). Miller, Cowan,

Cowan, Hetherington, and Clingempeel (1993), who reported stronger associations between familial variables and externalizing behavior for younger than for older children, attributed the differences to older children's increased independence and interactions with peers, teachers, and others in the community.

The second hypothesis was that associations may be stronger in later childhood and adolescence as a result of cumulative, reciprocal influences of each member of the dyad on the other over time. A key principle of reciprocity theory is that the mutuality of parent and child influences takes many years to develop; if this is true, the congruence between parent and child behavior should be greater at older than at younger ages (MacCoby, 1992; Patterson, 1982; Radke-Yarrow et al., 1983).

The failure of prior reviews to report age differences in caregiving-externalizing associations can be seen as indicating that such differences do not exist. However, this issue has not been systematically probed. Moreover, it is possible that heavy reliance on questionnaire measures in previous reviews has contributed to the absence of findings. If, as we suspect, questionnaire measures yield weak findings and are more common in studies of older children than in those involving younger children, this may have introduced a confound in the study of age effects.

Gender of Child

Sex differences in the association between caregiving and externalizing behavior are sometimes assumed because more studies have examined associations between caregiving and externalizing behavior for boys than for girls, at least in clinic populations. For example, Patterson's landmark work on coercive cycles of parent-child interaction was based on the study of boys only (e.g., Patterson, 1980). However, none of the major reviews on caregiving and child externalizing (e.g., Parke & Slaby, 1983; Rollins & Thomas, 1979) have concluded that there are stronger associations for boys than for girls; in fact, Rollins and Thomas (1979) and Loeber and Stouthamer-Loeber (1986) explicitly commented on the absence of significant sex differences in caregiving-externalizing associations. Thus, it remains unclear whether there are small but consistent differences in male-female associations that might be detected in a meta-analysis.

Findings from research linking parental discord and child externalizing suggest that the gender effects may be more complex than previously suspected. Reviews of the parental discord literature (Block, Block, & Morrison, 1981; Emery, 1984; Reid & Crisafulli, 1990) have repeatedly indicated that sons are more adversely affected by parental discord than are daughters. However, a meta-analysis (Zaslow, 1989) found that discord leads to a greater increase in externalizing behaviors for sons than for daughters only when the children are preadolescent and only when they are living with an unremarried mother. Such findings

² We are indebted to the reviewers who urged us to include questionnaire-based studies. In our first draft, we omitted these studies because we assumed that they yield weak effects. The reviewers pointed out that even if this assumption is widely shared, there is not systematic proof of it.

have been interpreted (e.g., by Gottman & Fainsilber, 1989) as suggesting that there may be stronger maternal caregiving–child behavior associations for boys than for girls, at least at some ages. Here we examined data relevant to that hypothesis.

Gender of Parent

To our knowledge, comparisons of caregiving–externalizing behavior associations for mothers versus fathers have not been a focus of theory. In the only review that we know to have addressed this issue, Loeber and Stouthamer-Loeber (1986) found stronger effects for fathers than for mothers. However, unlike the present review, their sample of studies focused on older children and adolescents who were clinic referred. It is not clear that their findings will generalize to younger and nonclinic populations.

There are several reasons to expect that fathers have greater influence than mothers on child externalizing behavior. First, fathers play an especially prominent role in disciplinary interactions (Lamb, 1981). Second, adult men exhibit more externalizing behavior than do adult women (Ember, 1984), and modeling plays an important role in the learning of externalizing (Bandura, 1977). Third, father absence is a major correlate of children's aggression (Biller, 1974; Lamb, 1981), which suggests that neglectful paternal caregiving may be associated with externalizing.

On the other hand, in most families mothers invest more time than fathers in caregiving. Even when mothers are employed outside the home, fathers spend less than half the time that mothers do in direct contact with their children (Lamb, Pleck, Charnov, & Levine, 1987). The greater frequency of interactions engaged in by mothers in comparison with fathers continues beyond the preschool years into middle childhood and adolescence (Lamb, Ketterlinus, & Fracasso, 1992). Perhaps the parent who spends the most time interacting with the child is the one who has the greatest influence on, and is most influenced by, the child's externalizing. Thus, it is possible to generate competing hypotheses regarding gender of parent effects in the caregiving–externalizing association.

Summary of Objectives

In this study, we performed a meta-analysis of evidence linking parental behavior to child externalizing (i.e., aggressive, hostile, and noncompliant) behavior. Among the questions we addressed were whether the caregiving–externalizing association varies as a function of (a) reliance on questionnaire measures of caregiving as opposed to other measures, (b) measures of caregiving involving combinations of variables as opposed to a single variable, (c) age of child, (d) gender of child, or (e) gender of parent. Because most prior reviews have not been quantitative, they may have overlooked modest but consistent and potentially important effects associated with these variables.

We included only concurrent studies in this meta-analysis. There are too few longitudinal and experimental (i.e., parent effect and child effect) studies to warrant a meta-analysis. However, we briefly summarize relevant findings from those studies at the end of the Results section.

Method

Retrieval of Studies

We conducted a literature search for studies published from 1940 through 1992 presenting quantitative data on the association between parental caregiving and child externalizing behavior association and involving mothers or fathers, or both, and children from infancy through adolescence. A computer-based information search was conducted on the PsycLit, Child Development Abstracts, and ERIC databases. The keywords used in the searches were *mother(s)*, *maternal*, *father(s)*, *paternal*, *parent(s)*, *parental*, *child rearing*, *discipline*, *socialization*, *aggression*, *antisocial behavior*, *behavior problems*, *externalizing*, *hostility*, and *noncompliance*. In addition, relevant reviews (Becker, 1964; Hetherington & Martin, 1986; Maccoby & Martin, 1983; B. Martin, 1975; Parke & Slaby, 1983; Rollins & Thomas, 1979; Steinmetz, 1979) were used to initiate reference trails to pertinent investigations, and issues of journals dated 1987 and later in which relevant studies were reported were hand searched to locate studies not yet incorporated into the computerized databases.

Inclusion criteria. To be included in the meta-analysis, a study had to meet the following criteria. First, the study had to use measures of child externalizing behavior as defined later. Second, the results had to be reported in sufficient detail to permit calculation of effect sizes. Third, the studies had to entail concurrent parent–child associations. Experimental and longitudinal designs were not included in the meta-analysis because they differ in important ways from concurrent studies and there are too few of them to allow for adequate statistical tests. Fourth, studies of clinic or other special samples of children (e.g., abused children or those at high risk) or parents (e.g., depressed) were not included. Extreme groups may yield effects of higher magnitude or effects different in direction than would be found in general population samples (cf. Loeber & Stouthamer-Loeber, 1986; Lytton, 1990). In the Discussion section, we compare the present findings with those from a recent meta-analysis of clinic-referred children (Loeber & Stouthamer-Loeber, 1986).

Study sample. Forty-seven studies published between 1945 and 1992 met our inclusion criteria. The subjects studied ranged in age from 10.5 months to “college” age. In 55% of the studies, children were 5 years of age or younger. All involved mothers, and 20 also included fathers. Only 15 studies provided separate data for mothers and fathers. Six studies relied exclusively on questionnaire measures of parents; 11 relied exclusively on interviews; 11 relied on both interviews and observations; and 19 relied on observations only. The studies included are listed in the References section.

Information extracted. Information about the following variables was extracted from the studies, and separate effects (average size and significance) were computed for each level of the variable: (a) design features, including SES, race, family size, intactness of families, and setting from which children were obtained; (b) age level of children; (c) type of parenting variable assessed (e.g., approval) and whether the caregiving measure assessed single variables or combinations of variables; (d) type of measure of parent behavior (e.g., questionnaire); (e) setting or source from which the family was obtained (school, community, birth records, or medical records); (f) type of child behavior (aggression, hostility, noncompliance, or externalizing); (g) setting in which child behavior was assessed (home or school); (h) gender of child (available for 13 studies only); and (i) gender of parent (available for 15 studies only).

Child Externalizing Behavior

Externalizing behavior refers here to aggression (e.g., fighting, bullying, or cruelty), hostility (e.g., anger or tantrums), and noncompliance

(e.g., disobedient, oppositional, or negativistic behavior). We focused on these behaviors because (a) they typically load on the externalizing factor in factor-analytic studies of children's problem behaviors (see review by Achenbach & Edelbrock, 1981) and (b) they are the most frequently examined behaviors in studies of caregiving-externalizing associations. High correlations between noncompliance and measures of aggression and hostility have been reported by Kagan and Moss (1962); Crandall, Orleans, Preston, and Rabson (1958); and Sears, Rau, and Alpert (1965). In addition to aggression, hostility, and noncompliance, we included composite measures of externalizing behavior (cf. Achenbach & Edelbrock, 1981).

Two judges coded child measures for the four child behavior variables (i.e., aggression, hostility, noncompliance, and general externalizing behavior). For example, the total aversive behavior measure—a composite of externalizing behaviors used by Patterson and his colleagues—was coded as general externalizing behavior. Interrater agreement in coding the four child measures, estimated by Cohen's kappa, averaged .89 with a range of .85 to .92.

Studies that focused on specific externalizing behavior, such as failure to delay gratification, lying, stealing, or cheating, were not included because only a few such studies met our criteria for inclusion. We also did not include "negative affect" because it typically entailed sadness as well as anger. Finally, we did not include prosocial behaviors except in those few instances in which *prosocial* was defined as the opposite of one of our four externalizing variables (e.g., friendly vs. hostile). Evidence of a negative relationship between prosocial and antisocial-externalizing behavior is not consistent (e.g., N. N. Feshbach & Feshbach, 1982).

Selection of Caregiving Variables

To identify caregiving dimensions, we searched parent measures used in concurrent studies of the caregiving-externalizing association and items loading on key factors obtained in factor-analytic studies of parent behavior. In the following paragraphs, we describe the parent measures used; the search of factor-analytic studies is described in a later section.

Two criteria were adopted in selecting caregiving variables. First, only parental behaviors were considered. We did not include attributes of parents (e.g., depression), the success of the parents' behavior (e.g., effectiveness of policy), parents' roles and relationships (e.g., mother responsible for financial matters), or parents' values and attitudes not directly relevant to parent behavior (e.g., values time spent with child). Second, a variable was selected only if there were separate measures of that variable in at least 5 of the 47 studies included in this review. Using these criteria, we identified six variables: approval, guidance, motivational strategies, synchrony, coercive control, and restrictiveness (the variables and theories emphasizing them are described later).

Each parent measure could be coded for as few as one and as many as six parent variables. For example, a measure of parental democracy, defined as respecting the child's input, providing explanations, and absence of force, would be coded for the variables synchrony, guidance, and (low) coercive control, respectively. (Other examples of the coding of parent measures are presented in Table 1.) The interrater agreement for the six variables, estimated by Cohen's kappa, averaged .81 with a range of .72 to .90. In cases of disagreement, the judges discussed their differences to reach a final decision.

Description of Caregiving Variables

In the following paragraphs, we describe the parental variables—approval, guidance, motivational strategies, synchrony, coercive control, and restrictiveness—and theories that emphasize each. Several other variables, such as dependency fostering, love withdrawal,³ and maturity demands, figure prominently in the theoretical literature on parent-

child relationships. However, they did not meet the criterion that they be examined, separately from other variables, in five or more studies.

Approval. Approval is the most frequently studied parental variable. Some studies focus more on verbal approval (e.g., praise), and others focus more on nonverbal approval (e.g., smiling and nodding). The common component seems to be an attempt to highlight, through positive responses, desirable behaviors or characteristics of the child. This variable is incorporated in almost all socialization theories (Maccoby & Martin, 1983).

Guidance. Guidance refers to constructive assistance and supervision. It is most often operationalized as explanations but also as providing clear and consistent⁴ messages to direct the child toward desired behavior, preparing and setting up the environment, pacing and grading information, and demonstrating. We consider these behaviors as a single variable because they have the common goal of increasing children's understanding of their world and they generally have not been differentiated from one another. Guidance is highlighted by social learning theorists (e.g., Bandura, 1977; Patterson & Stouthamer-Loeber, 1984) and by socialization theorists who emphasize the importance of parental induction (e.g., Hoffman, 1970; Rollins & Thomas, 1979), quality of assistance (e.g., Sroufe et al., 1981), consistency (e.g., Baumrind, 1971, 1983b; Lytton, 1980), and sensitivity when issuing directives (e.g., McLoughlin, 1983; Schaffer & Crook, 1980).

Motivational strategies. Motivational strategies refer to greater reliance on positive than negative incentives, on incentives that are reasonable and fair (e.g., earned privileges and time out for disruptive behavior), and on behaviors that highlight the positive versus negative aspects of a situation (e.g., focusing on desirable consequences as opposed to relying on threats). Motivational strategies are emphasized by social learning theorists (e.g., Forehand, 1977; Patterson, 1980; Ross, 1981).

Synchrony. Synchrony⁵ refers to parental behavior that is congruent with (i.e., maintains the perspective of) the child's preceding behavior (cf. Rocissano, Lynch, & Slade, 1987). It consists of attending and listening to the child's signals, acknowledging the child's verbalizations and needs, cooperating with the child's requests, and following and participating in the child's initiatives (e.g., Rocissano et al., 1987; Stern, 1980). Concepts overlapping synchrony are attunement, availability, empathy, involvement, openness, participation, and sensitivity; we

³ *Love withdrawal* has been used to refer to a remarkably broad range of parent behaviors, including chronic, insensitive deprivations of affection and occasional, sensitive time-outs for unacceptable behavior. Given the broad variability in definitions, we decided not to include this variable.

⁴ *Consistency* did not meet our criterion that it be considered in five or more studies. The issue of consistency arises with regard to both limits and privileges. Parents can be consistent or inconsistent when enforcing rules or directives and when honoring options and commitments to the child. Other forms of consistency include (a) modeling desired behavior (i.e., practicing what one preaches), (b) giving congruent (as opposed to mixed) messages to the child, and (c) lacking variability in quality or type of caregiving. Unfortunately, investigators who have studied consistency have rarely provided detailed definitions of this complex construct. The lack of agreement regarding definition and the difficulty in operationalizing some of the definitions (e.g., congruent messages) may account for the limited empirical scrutiny of this variable. We included consistency within guidance whenever consistency pertained to parental assistance or direction.

⁵ Although the term *responsiveness* is more commonly used than *synchrony* to refer to many of the behaviors included here, responsiveness has the disadvantage that it is sometimes used to refer to a larger domain of behaviors, including guidance and approval. We use the term *responsiveness* to refer to this larger domain of behavior.

Table 1
Variables Loading On Acceptance-Responsiveness Factors

Variable	Examples of items coded as belonging to variable	No. factors with one or more items belonging to variable	Total no. items belonging to variable
Approval	Praise, ridicule,* approve, encourage	10	16
Guidance	Reasoning, clarity of policy, explains	8	11
Motivational strategies	Rewards, threatens,* punishes*	7	11
Coercion	Orders, coercive, physical interference	4	6
Synchrony	Attentive, responsive, participates, sensitive	11	29
Affection	Affection, warmth	10	15
Miscellaneous	Egalitarianism, directive,* social stimulation, strict,* use of tangible rewards, withdrawal of love*	7	12

* Negative loading.

coded them as synchrony unless their definitions were inconsistent with our definition of synchrony. Although related to noncoercive control, synchrony is primarily concerned with parental responses to child initiations rather than with parental initiations. The concept of synchrony has been most emphasized by humanists (e.g., Fraiberg, 1959; Moustakas, 1974) and attachment theorists (e.g., see Ainsworth, Bell, & Stayton's, 1974, concept of sensitivity).

Coercive control. Coercion involves attempts to influence the child by using force, physical manipulation, or harsh or repetitive commands. By contrast, noncoercive control involves fostering a sense of choice (e.g., by presenting options to the child). We distinguished noncoercive control from guidance in that the former involves attempts to influence the child, whereas the latter refers to fostering the child's understanding (cf., Hoffman, 1960; Kuczynski, Kochanska, Radke-Yarrow, & Girmius Brown, 1987; Martin, 1981; Stayton, Hogan, & Ainsworth, 1971). Coercive control is highlighted by attachment theorists (e.g., Sroufe et al., 1981), by socialization theorists who emphasize the deleterious effects of authoritarian caregiving (e.g., Baldwin, Kalhorn, & Breese, 1945; Baumrind, 1989; Hoffman, 1970; Rollins & Thomas, 1979), and by theorists interested in "psychological reactance" (e.g., Brehm, 1981).

Restrictiveness. Restrictiveness refers to the extent to which parents place limits and constraints on the child's behavior. Restrictiveness is distinguished from coerciveness in that the former refers to the degree of constraint and the latter to the force involved in the constraint. Measures labeled *restrictiveness*, *strictness*, and *directiveness* were typically coded for the variable restrictiveness. Unlike the other variables, restrictiveness is not a primary concern of socialization theorists.

Relations Among Caregiving Variables: Factor-Analytic Findings

The decision of investigators to combine several caregiving variables in a single measure (i.e., to create a "multiple variable measure") was sometimes based on conceptual grounds and sometimes on grounds that these variables were empirically interrelated. The interrelatedness of the variables is relevant to the validity of the multiple variable measures; if the variables are indeed interrelated, then there is more justification for considering them jointly as a larger construct or pattern. To address this issue, we next review factor-analytic evidence.

Factor-analytic studies of parental behavior are relevant to the issue of patterns in that they indicate which variables are interrelated and which are independent of one another. In searching for factor-analytic studies, we relied on the same selection procedures described earlier. Briefly, the studies were obtained through computer-based information

searches and reviews of parent-child relations research involving non-clinic samples (e.g., Maccoby & Martin, 1983). Altogether, we found 12 studies (Baumrind, 1983a; Becker, Peterson, Luria, Shoemaker, & Hellmer, 1962; Bronstein-Burrows, 1981; Clarke-Stewart, 1973; Lorr & Jenkins, 1953; Milton, 1958; Minturn & Lambert, 1964; Peterson & Migliorino, 1967; Schaefer, 1959; Sears, Maccoby, & Levin, 1957; Shmukler, 1981; Stayton et al., 1971). The mean age of children in these studies was 5.25 years (range = 10.5 months to 11.5 years).

Despite diverse methods and populations, the 12 studies showed a fairly consistent picture. First, in each study there was one factor (involving two or more of the variables described earlier) that was relevant to parental acceptance or responsiveness, or both (cf. Baumrind, 1983a; Lorr & Jenkins, 1953; Schaefer, 1959; Stayton et al., 1971). The acceptance-responsiveness factor typically accounted for the largest portion of variance in the factor analysis. Second, most of the 12 studies identified a second factor, orthogonal to acceptance-responsiveness, that was relevant to restrictiveness. Similar conclusions regarding factor-analytic findings have been drawn by others (Becker, 1964; Maccoby & Martin, 1983; B. Martin, 1975; Rollins & Thomas, 1979); acceptance-responsiveness and restrictiveness factors have been commonly identified, although the precise names given to the factors have differed somewhat from study to study.⁶

To test the reliability and validity of our conclusions regarding the factors, we asked two child development graduate students to identify the relevant factors in each study. First, they judged which factor in each study was most concerned with parents' acceptance of and responsiveness to their children's needs. The raters were given the 12 factor-analytic studies. In determining which factor best reflected acceptance-responsiveness, raters considered the items loading on each factor as well as the factor labels assigned by the authors. The raters agreed 100% in their identification of the acceptance-responsiveness factor. Second, the graduate students judged which factor in each study was the one most concerned with restrictiveness. The reliability (Cohen's kappa) of their agreement was .71.

The decision to label a factor *restrictiveness* was based on its including

⁶ The term *warmth* is sometimes used in the literature instead of the terms *acceptance* and *responsiveness*. We regard *acceptance-responsiveness* as the more appropriate label for the variety of behaviors we are subsuming because our term encompasses a broader range of behaviors than displays of *warmth* alone. Similarly, the term *control* is often used instead of *restrictiveness*. We chose the latter term because of ambiguity associated with *control* (Maccoby, 1980).

a majority of items that fit our earlier definition of restrictiveness. To determine how many of the other five caregiving variables—approval, guidance, motivational strategies, synchrony, and coercive control—were related to items from the acceptance–responsiveness factors, the judges classified each item from all 12 acceptance–responsiveness factors into one of seven variables: the five just mentioned; the variable *affection*, which frequently appeared in the factor-analytic studies and was often difficult to code in terms of the other variables; and a miscellaneous variable for behaviors not assignable to any of the other variables. The raters' task was to classify items (e.g., praise) from the factors into one of the variables (e.g., approval; examples of how items were classified are provided in Table 1).

The interrater agreement regarding whether a caregiving variable did or did not relate to a specific item, estimated by Cohen's kappa, ranged from .77 to .89 for the seven variables. In cases of disagreement about variables, a final decision was reached through discussion of the judges. If either judge classified an item as belonging to the miscellaneous variable, it was scored as miscellaneous to obtain a conservative estimate of the percentage of items not pertaining to the six other variables. Still, the percentage of miscellaneous items was low (12%).

Table 1 shows the number of factors with items belonging to each variable and the total number of items belonging to each variable. Most of the 12 acceptance–responsiveness factors included behaviors belonging to the approval, guidance, motivational strategies, and synchrony variables. These variables always loaded in the positive direction on the acceptance–responsiveness factor. Also heavily represented was affection; this variable loaded positively on 10 of the 12 acceptance–responsiveness factors. The coercive control variable, although examined in only four studies, loaded negatively on the acceptance–responsiveness factor in all four. Thus, the factor-analytic evidence provides justification for regarding these caregiving variables as interrelated and for considering them together in a single measure.

Computation and Analysis of Effects

Most of the studies expressed the association between parenting and externalizing behavior in terms of Pearson's product–moment correlation. To compare the correlations involving coercive control and those involving restrictiveness, which were positive, with the correlations involving the other caregiving variables, which were negative, it was necessary to multiply the latter by -1 . Thus, for all of the correlations except those involving coercive control and restrictiveness, positive correlations mean that the more of the caregiving variable involved, the less the externalizing (e.g., the more the parent is approving, the less the child is externalizing).

The methods for synthesizing results of correlational studies are rather straightforward. A common method, which we adopted, is to convert correlations to z scores and to compute the mean of the z scores between variables examining the same research question (Glass, McGaw, & Smith, 1981; Wolf, 1986). In addition to analyses in which the z score for each study was weighted equally, we also performed analyses in which the z score was weighted in proportion to its sample size (Hedges & Olkin, 1985). The two sets of analyses yielded very similar findings; thus, the analyses based on the nonadjusted z scores are reported here. The z scores were converted back to correlations after analyses were completed, and these correlations are reported in the tables and the text because of their greater familiarity to readers.

When correlations were not available, estimates were devised by means of procedures found in Glass et al. (1981), Rosenthal and Rubin (1982), and Wolf (1986). For example, the t statistic can be converted to a correlation with the following equation: $r = t/(t + df)$. When investigators reported nonsignificant effects, there was sometimes insufficient information to compute an effect size. We used the common, although

conservative, strategy of assigning a correlation of .00 (indicating no association) in such cases. The original correlations relevant to the meta-analysis totaled several hundred for the 47 studies. Some studies had as few as 1 correlation, and 1 study had 180. Studies at the higher end of the range might present correlations involving several parent and child variables, breakdowns by gender or age of child, and so on.

Unfortunately, meta-analysis does not offer a clear-cut way of aggregating such data. In computing averages over different studies, we decided not to consider all correlations within studies equally because this average weights studies according to the number of correlations reported. Instead, relevant correlations in each study were averaged (after converting them to z scores) to form a single study effect score, and these scores were themselves averaged to estimate the population effect size. For example, in computing the average effect size for fathers, the average of all correlations involving fathers was computed in each study; these scores were then averaged across studies. In this way, each study was given equal weight.

The averaging just described pooled significant and nonsignificant correlations. This procedure can be justified on grounds that the degree of a relationship, and not its significance, constitutes the raw data of meta-analysis. However, the procedure may result in distortions when there are a number of sizable correlations based on small sample sizes because chance factors are more likely to contribute to sizable correlations when small sample sizes are used. Also, averaging correlations across studies does not provide a measure of how many studies supported a hypothesis. For these reasons, we used an additional measure: the percentage of significant correlations ($p < .05$) out of the total number of relevant correlations reported in a study.

Results

Over the 47 studies, the mean study effect size (r) between parent measures and child externalizing measures was .24, and the mean percentage of significant effects was 46 (both were significantly greater than zero, $ps < .001$). An analysis of variance (ANOVA) comparing the effect sizes associated with the four different types of child behavior variables—noncompliance, aggression, hostility, and general externalizing behavior—yielded no significant differences. Similarly, an ANOVA comparing the effect sizes for child measures obtained from different settings (i.e., home, school, or both) was nonsignificant. Parallel ANOVAs, with percentage of significant effects rather than effect size as the dependent variable, were also nonsignificant. Therefore, in subsequent analyses, correlations involving different child measures were not treated separately.

We first examined differences between questionnaire and other measures of caregiving. Next we examined the variable(s) included in the measure of caregiving. As discussed earlier, there are two potentially productive ways of looking at the caregiving–externalizing association: (a) examining the associations for each individual caregiving variable and, given that five of the caregiving variables load on a common factor, acceptance–responsiveness and (b) examining the strength of association for caregiving measures that combined all five variables. We used both of these approaches. In addition, we examined other frequently researched combinations of variables (patterns). We also analyzed differences pertaining to age of child, gender of child, gender of parent, and characteristics of the sample. Finally, we briefly summarized experimental and longitudinal findings as they pertain to these issues.

Differences Between Questionnaires and Other Measures

A *t* test was used to test the hypothesis that studies using questionnaire measures of caregiving would yield smaller effect sizes than would other studies. The result was significant, $t(45) = 2.20, p < .05$, indicating stronger effect sizes in the studies not relying on questionnaire measures ($r = .28$) than in those relying on questionnaires ($r = .11$). However, there were no differences in the percentage of significant effects obtained in the two groups of studies because the questionnaire study sample sizes were much higher. Even excluding the outlier questionnaire study (Lamborn, Mounts, Steinberg, & Dornbusch, 1991), which had several thousand subjects, the mean questionnaire study had about twice as many subjects ($N = 153$) as the mean nonquestionnaire study ($N = 77$).

To examine differences between the measures included in the studies not relying on questionnaires, we further divided these studies into those relying on interviews, observations, and a combination of the two. (Interviews were distinguished from questionnaires in that they relied on ratings by experimenters based on parent responses to open-ended questions; questionnaires relied on parent responses to forced-choice questions.) The effect sizes (.29, .27, and .28, respectively) and percentages of significant effects (49, 45, and 54, respectively) were very similar to one another, and no difference was significant.

Because the questionnaire-based studies yielded different findings than did other studies, we performed two analyses—with and without questionnaire studies—for each issue addressed subsequently. We report only the analysis including the questionnaire studies unless the two sets of analyses yielded different findings (as happened in the case of age differences).

Differences Between Caregiving Variables

In analyzing the effect sizes associated with the six parental variables—approval, guidance, motivational strategies, synchrony, coercive control, and restrictiveness—we first considered measures tapping the six individual variables. That is, measures of parenting that reflected two or more variables were not included in this analysis. The associations between each of the caregiving variables and externalizing behavior are presented in Table 2; all of them except restrictiveness were significantly greater than zero; the *t* values ranged from $t(6) = 2.82, p < .05$, for approval to $t(16) = 6.41, p < .001$, for synchrony. The percentages of significant effects for each variable except restrictiveness were also significantly greater than chance; the *z* values ranged from $z(6) = 3.28, p < .01$, for approval to $z(14) = 6.74, p < .001$, for guidance. One-way ANOVAs examining differences between the six variables in study effect sizes and in percentage of significant effects were not significant (both $ps > .20$).

Differences Between Patterns of Caregiving

The preceding analyses examined only individual variables. We also sought to test the notion that patterns of caregiving variables are better predictors of child behavior than are indi-

vidual variables (Baumrind, 1989; Maccoby & Martin, 1983; Staub, 1979).

The acceptance-responsiveness pattern. As noted earlier, the factor-analytic findings indicate the existence of an acceptance-responsiveness factor on which approval, guidance, motivational strategies, and synchrony load positively and coercive control loads negatively. Because the variables are interrelated, there is justification for considering them jointly as a pattern. We were interested in whether measures assessing the larger pattern of acceptance-responsiveness (i.e., composite acceptance-responsiveness measures that include behaviors representing multiple caregiving variables) were better able to predict externalizing than were measures that included behaviors representing fewer variables. To examine this issue, parent measures were categorized into five groups corresponding to the number of acceptance-responsiveness variables they assessed (i.e., one through five). The ANOVA indicated significant differences between these groups in mean study effect size, $F(4, 60) = 2.60, p < .05$, and in mean percentage of significant effects, $F(4, 60) = 3.44, p = .01$. The means, presented in Table 3, reflected the generally increasing study effects, which were captured by significant linear contrasts for mean effect size, $t = 3.98, p < .001$, and for percentage of significant effects, $t = 5.01, p < .001$. There was a generally linear increase in effect size and percentage of significant effects as one moved from parent measures that assessed just one of the variables loading on the acceptance-responsiveness factor (an effect size of .23 and a percentage of 38) to measures assessing all five variables loading on that factor (an effect size of .45 and a percentage of 81). Using Student Newman-Keuls tests in pairwise comparisons of the measures in terms of effect size, we found significant differences between measures assessing four or five variables and those assessing one or two variables ($ps < .05$); the corresponding analyses for percentage of significant effects indicated significant differences only between the measures assessing five variables and those assessing one variable ($p < .05$). Note that such findings with regard to number of variables examined do not provide information about the content of those variables.

Patterns involving particular combinations. In testing whether other combinations of variables were especially good predictors of externalizing behavior, we were limited to those combinations of variables that had been previously assessed with sufficient frequency to allow for a meta-analysis. There were four combinations of variables that had been assessed in at least three studies (the minimum number of studies that we required). All four of these patterns involved approval, in combination with (a) guidance, (b) motivational strategies, (c) synchrony, or (d) motivational strategies and synchrony. There were no significant differences among these four patterns.

Differences Between Younger and Older Children

To test for age effects, children were divided into two groups: toddler to preschool (10.5 months to 5 years) and grade school to adolescence (6 to 15.5 years). This division was chosen because it corresponds to the time of entry into school. Conveniently, no studies had mean ages between 5 and 6 years. Twenty-seven studies used the younger age group, and 22 used

Table 2
Study Effects for Caregiving Variables

Variable	No. studies in which variable was present	Mean study effect size (r)	Mean % significant effects per study
Approval	7	.11*	32**
Guidance	15	.23***	48***
Motivational strategies	7	.22**	33***
Coercion	9	.21**	30***
Synchrony	17	.25***	34***
Restrictiveness	7	.06	4

Note. The mean study effect size (r) refers to the average correlation between the caregiving variable and externalizing; the last column contains the percentages of these correlations that were significant. These effects are based on correlations in which each caregiving variable was assessed separately. Measures of caregiving tapping more than one variable are not presented.

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

the older age group (for studies in which data were analyzed separately for discrete ages, the data relevant to each age were considered in their appropriate group). The difference between the groups was not quite significant for study effect size, $F(1, 47) = 3.98$, $.05 < p < .06$, but was significant for percentage of significant effects, $F(1, 47) = 9.58$, $p < .005$. The mean effect sizes for the younger and older age groups were .21 and .31, respectively; the corresponding values for percentage of significant effects were 33 and 61.

The equivocal findings involving age may be due to the inclusion of questionnaire-based studies, which yielded weak results and focused on older children. When questionnaire-based studies were excluded, significant findings were obtained for study effect size, $F(1, 42) = 8.72$, $p < .005$, as well as for percentage of significant effects, $F(1, 42) = 10.68$, $p < .005$. Means for the younger and older age groups were .21 and .37 for effect size and 33 and 64 for percentage of significant effects. A subsequent analysis in which age was divided into four groups (0–2 years, 2.5–5 years, 6–11 years, and 12 years through adolescence) also yielded significant findings for effect size, $F(3, 40) = 2.86$, $p < .05$, and for percentage of significant effects, $F(3, 40) = 3.81$, $p < .05$. Means for effect size were .24, .20, .36, and .38, respectively, and means for percentage of significant effects were 30, 34, 59, and 75. Inspection of the means, as well as the two-group ANOVA reported earlier, indicates that the critical shift takes

place in the 5- to 6-year age range (i.e., at approximately the time of entry into school).

Baumrind's (1991) study of older children's externalizing was not included in this meta-analysis because it used an F test. The study is worthy of mention, however, because the sample was large ($N = 125$) and because excellent methods were used (e.g., 20 hr of observation and independent assessments of parent and child). The F value obtained corresponds to an epsilon of .43. Because epsilon is a measure of relationship strength somewhat comparable to effect size, Baumrind's data provide additional evidence of the strength of the caregiving–externalizing association among older children. When the same sample and similar methods were used to assess the parents and children 11 years earlier, the associations obtained were weak.

Differences Between Boys and Girls

The analysis of sex differences, based on the 13 studies that reported separate effects for boys and girls, was in the predicted direction. The mean effects for boys and girls were .21 and .09, respectively; the percentages of significant effects were 38 and 17. However, neither t value was significant ($.05 < p < .10$ in both cases). On the basis of findings from Zaslow's (1989) meta-analysis—indicating stronger associations for boys than girls but only among preadolescent children of divorced mothers

Table 3
Study Effects for Variables Separately and in Combination With One Another

Type of measure	No. studies	Mean study effect size (r)	Mean % significant effects per study
Variables separately	33	.23**	38**
Combination of two variables	26	.22**	43**
Combination of three variables	9	.22*	50**
Combination of four variables	5	.43**	80**
Combination of five variables	7	.45**	81**

Note. Effect size refers to the average correlation between caregiving and child externalizing; the last column contains the percentages of these correlations that were significant.

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

who had not remarried—we performed a subsequent analysis in which only data involving mothers and only studies with preadolescent children were used (11 of the 13 studies had at least some data pertaining to preadolescents). These analyses were significant for effect size, $t(10) = 2.47, p < .05$, and for percentage of significant effects, $t(10) = 2.39, p < .05$. The mean effect sizes for boys and girls were .24 and .07, respectively; the mean percentages of significant effects were 45 and 20. The findings indicated that, for mothers and their preadolescent children, caregiving was associated with absence of externalizing more strongly in boys than in girls. Because the findings entail within-study comparisons of groups, they mitigate the possibility of a confound in the procedures used.

Differences Between Mothers and Fathers

The difference between effects for mothers and fathers, based on 15 studies, was highly significant, $t(14) = 3.63, p < .005$. The mean effect sizes for mothers and fathers were .30 and .21, respectively. The mean percentages of significant effects were 63 and 36, respectively, $t(14) = 2.88, p < .05$. It appears that mothers' quality of caregiving, as compared with fathers', is more closely associated with absence of externalizing. Here again the findings entail within-study comparisons of groups, thus mitigating the possibility of a confound in the procedures used.

Subject Characteristics

Information was extracted regarding SES, race, family intactness, birth order, setting or source from which families were obtained (school, community, birth records, or medical setting), and setting in which child behavior was assessed (home, school, or both). The number of studies reporting data on race (19), family intactness (17), and birth order (10) was too low to permit meaningful analyses because between-study comparisons were required and the studies that did report data used predominantly intact and White samples (i.e., there was very little variability with respect to intactness or race). There were no significant differences (in effect size or percentage of significant effects) among the four types of settings from which families were obtained or between settings in which child behavior was assessed.

SES, which was divided into three groups (low to middle, predominantly middle, and middle to high), yielded a finding of borderline significance for effect size, $F(2, 36) = 2.63, p = .09$. Means were .31 (low to middle), .27 (middle), and .12 (middle to high). However, post hoc analyses did not indicate significant differences between pairs of means, and the finding for percentage of significant effects was not significant.

Attempts to analyze the source of information about the child (e.g., mother, father, teacher, peer, home observer, or school observer) were abandoned because a combination of sources was typically used and the analyses became unwieldy. Because we were particularly concerned that differences in effects for maternal versus paternal caregiving might reflect greater reliance on mother reports of child behavior than on father reports, we examined the 15 studies reporting both maternal and paternal effects to test this possibility. Only 4 of these studies used

mother reports but not father reports, and all 4 of these used other informants in addition to the mother (e.g., teachers). Moreover, the findings for these 4 studies were comparable to the findings obtained for the 11 others.

Longitudinal Studies

Because there were few longitudinal studies and because they differed in age intervals examined, it was not possible to conduct a meaningful meta-analysis. Instead, we merely summarize findings from relevant studies.

Longitudinal studies were obtained through the same literature search used to obtain concurrent studies. In addition, reference trails from all longitudinal studies were followed to search for studies not mentioned elsewhere. The same criteria used to select caregiving and child behavior measures in the concurrent studies were used in the longitudinal studies. Altogether, 11 longitudinal studies were found (Baumrind, 1991; Bradley, Caldwell, & Rock, 1988; Bronson, 1966; Bryan & Freed, 1982; Johannesson, 1974; Kagan & Moss, 1962; Lefkowitz, Heusmann, & Eron, 1978; Maccoby, Snow, & Jacklin, 1984; J. Martin, 1981; Pettit & Bates, 1989; Simons, Whitbeck, Conger, & Chyi-In, 1991).⁷

The mean correlation between caregiving and later externalizing behavior for 10 of the longitudinal studies was .16, and the mean percentage of significant effects was 47. The percentage of significant effects was high because several of the studies used extremely large sample sizes (>150). The 11th study (Lefkowitz et al., 1978) reported *F* values, which can be converted to epsilons to obtain a measure of strength of association that is somewhat comparable to effect size. The mean epsilon was very low (.07), and only 25% of the effects in that study were significant.

Questionnaire measures. To assess parent behavior, three studies used questionnaires; two were child reports of the parent (Bryan & Freed, 1982; Simons et al., 1991), and one was a parent self-report (Lefkowitz et al., 1978). The effect size of these studies was low but not notably lower than those in the other studies. It is possible that the questionnaire findings were inflated by the use of a single informant to obtain data on the parent and the child. For example, Simons et al. found a correlation of .12 when different informants were used and a correlation of .19 when the same informant (the parent) assessed parent and child (see also Achenbach, McConaughy, & Howell, 1987, regarding low correlations for cross-informant comparisons).

Measures tapping multiple caregiving variables. Only one study (Bradley et al., 1988) used a measure of caregiving that tapped multiple caregiving variables (which we defined earlier

⁷ Several studies based on one large set of subjects examined by Bates have been published (Bates & Bayles, 1988; Bates, Bayles, Bennett, Ridge, & Brown, 1991; Bates, Maslin, & Frankel, 1985; Frankel & Bates, 1990; Pettit & Bates, 1989). The data from these studies are overlapping. We report here only findings from Pettit and Bates because the measures used in that study best fit the criteria used in our meta-analysis. We strongly encourage readers to review the several studies because they provide unusually comprehensive data on longitudinal parent-child relations.

as including at least four of the five variables constituting acceptance–responsiveness). That measure, labeled *responsiveness*, was assessed when children were 6 months old, and it predicted child externalizing at 10 years of age ($r = .38, p < .05$). Although mothers' responsiveness to children at 2 years of age did not predict child externalizing at 10 years of age, the overall results of this study are impressive given the time span between assessments of parent and child. The reason for the general weakness of the longitudinal findings may be that 10 of the 11 studies used measures that did not tap multiple variables.

Child gender. The longitudinal findings lend slight support to the conclusion from our meta-analysis that, for mothers and their preadolescent children, there are stronger caregiving–externalizing associations for boys than for girls. Bronson (1966), who predicted children's externalizing at 5 to 13 years of age based on assessments of maternal caregiving when children were 21 to 36 months old, found correlations of .31 for boys and .24 for girls. J. Martin (1981), who predicted externalizing behavior at 22 to 42 months old based on caregiving when children were 10 months of age, found a correlation of .40 for boys and a correlation of .18 for girls. In neither case was the difference significant. In the only other study of preadolescents to report sex differences, Kagan and Moss (1962) found that the correlations for boys and for girls were both .01. The absence of an overall association between caregiving and externalizing in that study casts doubt on the meaningfulness of the gender comparison.

There were also two studies of adult children. Simons et al. (1991) found that the association between caregiving and externalizing was stronger for female children ($r = .19$) than for male children ($r = .14$), and Lefkowitz et al. (1978) found stronger associations for men ($\epsilon = .09$) than for women ($\epsilon = .05$). The absence of a clear gender effect with older children again suggests that it occurs only with preadolescents.

Mothers versus fathers. Only two longitudinal studies examined mother–father differences, and they reported small differences in opposite directions from one another. Bronson (1966) found correlations of .17 and .19 for mothers and fathers, respectively; Simons et al. (1991) found corresponding correlations of .17 and .16. Given these trivial differences, the possibility arises that longitudinal effects, in contrast to concurrent effects, are not stronger for mothers than for fathers.

Child age. There were no clear differences in caregiving–externalizing associations for older children versus younger children. Of the three studies using young children (5 years old or less), two reported modest results: J. Martin (1981; $r = .30$) and Pettit and Bates (1989; $r = .20$). The third study (Maccoby et al., 1984) obtained nonsignificant correlations, and the effect sizes were not reported. There were five studies involving older children: Johannesson (1974) reported near-zero associations, and Bradley et al. (1988; $r = .19$), Bryan and Freed (1982; $r = .27$), Lefkowitz et al. (1978; $\epsilon = .07$), and Simons et al. (1991; $r = .16$) reported weak associations. When comparing the findings for younger versus older children, one should keep in mind that the studies of older children entailed longer intervals (between the early assessments of the parent and the later assessments of the child) than did the studies of the younger children. In the three studies of younger children, the interval was 3 years

or less; in four of the studies of older children, the interval was 8 years or more (in the fifth study—that of Bryan and Freed—there were insufficient data to compute the interval). Given this confound of age of child and length of interval, it is difficult to draw conclusions about the influence of age of child on the strength of the longitudinal associations.

Two studies used both younger and older children. Bronson (1966) found that the older the child, the weaker the caregiving–externalizing association; however, once again age of child and length of interval (between assessment of parent and child) were confounded. That is, parent behavior was assessed in early childhood and the child's behavior was assessed at different times; as a result, the older the child, the greater the length of the interval. Kagan and Moss (1962), by contrast, unconfounded age of child and length of interval by correlating child behavior with the parent's behavior that was assessed in the time period immediately preceding the child's assessment. Kagan and Moss found a clear pattern of increasingly strong associations with increasing age (from 3–6 to 6–10 to 10–14 years). Although it is difficult to draw conclusions on the basis of a single study, the Kagan and Moss findings parallel what we found in the meta-analysis of concurrent studies.

The Weiss, Dodge, Bates, and Pettit (1992) study deserves special consideration because of the size of the samples (two studies were performed with sample sizes of 278 and 274) and the quality of the measures (interviews rather than questionnaire measures of the parents and multiple and independent assessments of the children). Children were in kindergarten and, thus, between the “younger” and “older” age groups in the meta-analysis. Parents' behavior was assessed from the child's infancy up to a year before kindergarten; child behavior was assessed in kindergarten. Thus, the interval between parent and child assessments was relatively brief. The effect sizes obtained, .22 and .23, were similar to one another and similar to the mean effect size in the meta-analysis (.24). This consistency in findings adds to our confidence in estimates of the mean effect based on the meta-analysis.

In summary, the longitudinal findings did not shed light on issues of type of parent measure, patterns of caregiving, or mother–father differences, and they provided limited support for the meta-analytic findings regarding gender and age of child. Although several of the studies were recent, they did not focus on measures that, according to our meta-analysis, are likeliest to yield strong effects. This may partly explain why the overall longitudinal findings are very weak. The length of interval between assessments may also have contributed to the weak longitudinal effects; when the interval was brief, the effect size was similar to that obtained in concurrent studies.

Experimental Studies

There have been surprisingly few experimental studies on parent–child relations involving nonclinical samples. Using the same procedures used when searching for concurrent and longitudinal studies, we found more than 300 experimental studies on parent education and parent training. Unfortunately, most of them were not relevant to this review because (a) they involved clinical samples of parents or children; (b) they used in-

interventions dealing with parental knowledge, support, and behavior without distinguishing the effects of each; or (c) the outcome assessed was change in parental attitudes or behavior rather than change in child behavior.

We found only six studies in which parental behavior was manipulated and the effects on child externalizing were assessed. In three of these studies (Johnson & Lobitz, 1974; Kuczynski, 1984; Lobitz & Johnson, 1975), parent behavior was manipulated indirectly. These studies were included because they led to predictable, large differences in parents' behavior and their effects on children's behavior were examined. We also briefly review studies in which child behavior was manipulated and parent behavior was assessed (i.e., child effect studies). Because there have been very few child effect studies, we include some involving clinic samples even though such samples are otherwise outside the purview of this review.

Parent effect studies. The dependent measure used in five of the parent effect studies was child compliance versus noncompliance (Johnson & Lobitz, 1974; Kuczynski, 1984; Lay, Waters, & Park, 1989; Parpal & Maccoby, 1985; Piffner & O'Leary, 1989), and it was a major component of the dependent measure in the sixth study (Lobitz & Johnson, 1975). All six studies showed that the parent behaviors included in this review have a strong and significant effect on child compliance. These strong effects stand in contrast to the generally weak effects obtained in the concurrent studies. The contrast is sharpened by the fact that five of the experimental studies used young children (i.e., 5 years old or younger), an age group that yielded weak findings in the meta-analysis.

The reason for the strong experimental effects may be that three of the studies (Johnson & Lobitz, 1974; Kuczynski, 1984; Lobitz & Johnson, 1975) manipulated multiple (i.e., four or five) caregiving variables and two other studies (Lay et al., 1989; Parpal & Maccoby, 1985) manipulated three of the caregiving variables. Alternately, the strong experimental findings may be due to reliance on an artificial responsiveness condition in which parents were extremely vigilant to the child and discipline of the child was not an issue. Lay et al. (1989) comment that their parental responsiveness condition, which was similar to that used in the other studies, "goes far beyond the reasonable goals of consistent supervision and availability" (p. 1410). In more naturalistic settings, in which extremely positive parental behavior is less likely and parental discipline is more likely, the effects of responsiveness may be more complex. The one experimental study that examined a situation involving parental discipline (Piffner & O'Leary, 1989) found less clear-cut effects for responsiveness than did the others.

The concept of reciprocity is key in explaining the findings from the parent effect studies. According to Parpal and Maccoby (1985), when parents are responsive to their children's needs (operationalized as following the child's lead, absence of criticisms, etc.), children are more likely to reciprocate by following the parents' lead, as manifest in compliance. There is evidence that the effects of parental responsiveness are mediated by children's sense of control (Parpal & Maccoby, 1985) and their positive affect (Lay et al., 1989). According to theorists who emphasize reciprocity, these qualities of child behavior become intermingled with parental acceptance-responsiveness, and the parent

and child mutually influence each other in linked streams of behavior (Maccoby, 1992; Patterson & Bank, 1989). Although Kuczynski (1984) did not explicitly mention reciprocity, he did emphasize the match between parents' and children's functioning.

Child effect studies. Most of the studies on child effects did not fit the criteria of this review both because the child was a confederate and because the child's behavior fell in the clinical range. The one study that met our criteria (Grusec & Kuczynski, 1980) is of limited relevance here because it focused on parental reactions to different kinds of disobedience rather than on reactions to disobedience versus nondisobedience.

Three studies examined effects of children with clinical levels of externalizing behavior versus effects of nonexternalizing children; in all three, externalizing children greatly reduced parents' acceptance-responsiveness. Stevens-Long (1973) found that parents reacted with more negative motivational strategies (corporal punishment) and disapproval (reprimands) to videotaped sequences portraying an aggressive child than to videotaped sequences portraying a nonaggressive child.

Brunk and Henggeler (1984) found that parents reacted to conduct-disordered children with less approval (fewer rewards) and more asynchrony (ignoring) and coercive control (commands) than they did to anxious, withdrawn children. Analyses of behavioral sequences indicated that parents reacted more to behavioral sets they developed during the interaction than to the child's actual behavior.

Anderson et al. (1986) compared reactions of mothers of normal boys with those of mothers of conduct-disordered boys. Each mother interacted with her own child as well as with a child of like classification and a child of a different classification. All mothers addressed more negative responses and more requests to conduct-disordered children. In contrast to the clear child effects, mothers did not have differential effects on the children, suggesting that the child has a greater influence on the parent than the parent has on the child. Interestingly, mothers of conduct-disordered children were more coercive with their own children than with other conduct-disordered children, suggesting "transactional effects arising from cumulative past interactions" (Anderson et al., 1986, p. 604).

These investigators concluded that the influences between parents' rejection-nonresponsiveness and child externalizing are reciprocal, with the child's contribution being at least as great as the parent's (cf. Bell & Chapman, 1986). There are several connections between these studies and the conclusions from our meta-analysis. They did not rely on questionnaire measures of parent behavior, and they focused on preadolescent boys and their mothers and on children more than 5 years of age. The findings indicated the importance of reciprocal, interactive, and transactional influences in the dyad. They also point to the existence of generalized expectations by parents about their children that have built up over an extended period of time and that influence subsequent interactions (Anderson et al., 1986; Brunk & Henggeler, 1984). In the next section, we rely on the notions of reciprocity and generalized expectations to help interpret findings from the meta-analysis.

Discussion

Our meta-analysis yielded significantly greater effects (a) for interviews and observations than for questionnaires, (b) for

measures assessing many, as opposed to assessing few, parental variables, (c) for older children than for younger children, (d) for boys than for girls, (e) and for mothers than for fathers. The first two of these findings were expected but had not been systematically tested in the past; the last three findings were not expected. Specifically, prior reviews indicated that there would be no age effects or boy–girl differences and that there would be stronger effects for fathers than for mothers. In this section, we discuss the implications of all five findings for the understanding of parent–child relations and externalizing behavior.

Measures of Parental Caregiving

As expected, questionnaires yielded weaker effects than did interview and observation measures. Holden and Edwards (1989) provided an excellent summary of the limitations of questionnaire measures of caregiving, including their low reliability and validity and their item ambiguity (without opportunities for respondents to clarify the questions or their answers). Yet it is important to note that questionnaires are not widely regarded as yielding weaker findings than other measures. No major reviews other than Holden and Edwards's have drawn this conclusion, and studies continue to be published that rely on questionnaires without noting that these measures are particularly likely to yield weak findings. The present meta-analysis may help investigators move from vague suspicions about questionnaires to a firm understanding of their limitations.

One qualification of these conclusions is that the methodology effect may be partly a product of the sample size and publication bias against nonsignificant findings. A bias against publishing nonsignificant effects may contribute to the tendency for correlations in smaller-sample studies (observational and interview) to be larger than those in larger-sample studies (questionnaire); smaller-sample studies with low correlations may simply not be published. Thus, the population correlation may be small, regardless of the type of measure used.

Patterns of Caregiving

Our results indicate that several caregiving variables—approval, guidance, motivational strategies, synchrony, and absence of coercive control—are negatively associated with child externalizing behavior. Moreover, the findings suggest that a pattern of caregiving involving all of these variables is especially predictive of child externalizing. What underlies this pattern, and how can one account for its predictive strength?

The factor-analytic finding that the caregiving variables are interrelated suggests that they are aspects of a larger construct that we refer to as acceptance–responsiveness. The acceptance–responsiveness construct captures a quality of mutuality and shared goals that underlies the several parent variables. The descriptions of the multiple variable measures (e.g., responsive, cooperative, supportive, accepting, nonaversive, noncoercive, and positive control) also emphasize the importance of the parent being in tune with, rather than in opposition to, the child and the child's needs.

Acceptance, responsiveness, or both are emphasized by investigators adhering to such diverse orientations as attachment

theory (Ainsworth et al., 1974), social learning theory (Patterson & Bank, 1989), and other prominent theories of parent–child relations (e.g., Baumrind, 1989; Maccoby & Martin, 1983; Rohner, 1986). All of these investigators agree that parents who are accepting of and responsive to their children's needs will have children who are more motivated to and better understand how to seek control in appropriate ways. Perhaps most important, the children gain experience in sustaining non-coercive joint activity (Maccoby, 1992). Conversely, parents who are rejecting and unresponsive increase their children's learning of and motivation to use socially unacceptable behaviors such as externalizing. The experimental studies on parent effects strongly support this interpretation.

Our assumption, reflected throughout this article, is that parent behavior influences child behavior. Despite our tendency to slip into the parent-to-child causal model, we recognize that other causal models are quite viable. For example, child-to-parent effects must be seriously considered in many of the findings we have reviewed here. Children who refrain from externalizing behavior may foster parents' efforts to be accepting of and responsive to their needs. Externalizing behavior may reduce parents' motivation to be accepting, deprive parents of opportunities to be responsive, and elicit parental responses such as coercion and disapproval (Bell & Chapman, 1986). There may be short-term child effects, involving parents' immediate reactions to a child's externalizing behavior, or more long-term effects, reflecting the wear and tear of interaction with an externalizing child over time. Additional experimental studies on child effects using parents' own children (as opposed to confederates) and long-term interventions are needed to test these possibilities. The weak associations found in the longitudinal studies of early parenting and later child externalizing serve as a reminder of the limitations of the simple parent-to-child model.

A third possibility is that genetic influences are operative. Similarities between parent and child behavior raise the possibility that there is an underlying substrate of hostile–aversive behavior or vulnerability to such behavior that manifests itself in adulthood as rejecting–nonresponsiveness and earlier in childhood as externalizing. Indeed, Patterson's coding scheme, which has been used by several investigators in this area, uses the same behaviors to assess parental caregiving and child externalizing. More likely, genetic influences are interacting with the environmental influences just mentioned: There is evidence that children who are genetically at risk for externalizing are particularly susceptible to environmental adversities such as parental rejection–nonresponsiveness (Cadoret & Cain, 1980; Cloninger, Sigvardsson, Bohman, & von Knorring, 1982; Mednick, Gabrielli, & Hutchings, 1987).

Perhaps the simplest interpretation of the predictive strength of the multiple variable measures is that they provide a wider lens for viewing the construct of acceptance–responsiveness than do measures assessing fewer variables. Combinations of different aspects of a larger construct often have greater predictive strength than any one aspect of the larger construct (e.g., SES is often a better predictor than are aspects of SES such as income, education, occupation, or neighborhood). On simple statistical grounds, one would expect better predictive strength when using multiple as opposed to single predictors, as long as

those predictors are themselves intercorrelated, as they were in the present study.

One of the most persistent controversies regarding parental caregiving involves the importance of parental control. Whereas some investigators depict high control as part of a pattern of optimal caregiving (Baumrind, 1975, 1983b; Coopersmith, 1967), others depict control either as irrelevant or as detrimental to optimal caregiving (Lewis, 1981). In part, this controversy stems from the multifaceted nature of control (cf. Maccoby, 1980). It includes several of the behaviors incorporated within acceptance–responsiveness, as well as behavior (e.g., restrictiveness) that is orthogonal to acceptance–responsiveness. We believe that acceptance–responsiveness captures elements of caregiving that would be regarded as optimal by those advocating both high and low control. Those who emphasize the virtues of high control consider clarifying of limits, consistency of limits, and order keeping to be key aspects of high control; we included these behaviors within guidance because of their similarity to other forms of guidance. Similarly, those who emphasize the virtues of low control consider following the child's lead and absence of force to be key aspects; we included following the child's lead within synchrony because of its similarity to other forms of synchrony, and we included absence of force in noncoercive control. Aspects of both high and low control may be needed to induce the child into a system of reciprocity (cf. Lau, Lew, Hau, Cheung, & Berndt, 1990; Maccoby, 1992).

We believe that the acceptance–responsiveness construct is predictive of child functioning because it incorporates the virtues of both high and low control.⁸ In other words, the sensitivity of the parent's control—whether it is well tailored to the child's needs—determines its effectiveness (cf. Westerman, 1990). Restrictiveness, which the factor-analytic findings indicate is orthogonal to acceptance–responsiveness, is an aspect of control that does not appear to be of much value in predicting externalizing.

The Influence of Age

From a developmental perspective, an important finding of this study was that the concurrent association between quality of caregiving and absence of externalizing behavior is greater for older children and adolescents than for toddlers and preschoolers.⁹ The one longitudinal study in this review that kept age of child and length of period between assessments of parent and child unconfounded (Kagan & Moss, 1962) revealed stronger associations with increasing age (from 3–6 years to 10–14 years). An increase in effect size with increasing age is particularly interesting in light of the decrease in time that parents spend with their children as their children mature (Pleck, 1982; Whiting & Edwards, 1988).

The findings for age are consistent with a cumulative reciprocity model of parent–child influence, according to which parents' negative caregiving and children's externalizing are continually exerting a pull on one another and, over time, these behaviors become increasingly interwoven. Contributing to this mutual pull is the development of mutual expectations. According to Radke-Yarrow et al. (1983, p. 502), "In theories of child-

rearing, parental behavior is assumed to have effects on children through a history of experiences. There is faith that, over time, parental influences lead to generalized behavioral tendencies that have some durability." By the same token, there is evidence from studies on child effects that, over time, parents develop generalized expectations or "sets" regarding their children's behaviors and that these sets influence parents' behavior (e.g., parents' "anticipatory discipline") toward their children (Brunk & Henggeler, 1984).

Another interpretation of the age-related findings is that there are important developmental changes in motives underlying externalizing behavior (Patterson, 1980; Rothbaum & Weisz, 1989). From preschool to middle childhood, there is a shift in externalizing from a preponderance of instrumental and autonomy-seeking motives to more hostile motives (Crockenberg & Litman, 1990; S. Feshbach, 1970; Rothbaum & Weisz, 1989). When externalizing arises from feelings of hostility and from intentional efforts to hurt others, as opposed to when it is instrumental and autonomy seeking, it may be more strongly associated with quality of caregiving. Negative caregiving may serve to suppress (e.g., due to fear) as well as to activate (e.g., due to defiance) instrumental and autonomy-fostering motives for externalizing, particularly in young children, thus mitigating the caregiving–externalizing association. By contrast, negative caregiving may have little suppressive effect but a strong activating effect on children's hostility. Child effects may also operate: Parents may react with more negative caregiving to the hostility of older children than to the instrumentality and autonomy seeking of younger children.

⁸ There are other control-related variables that have been linked to externalizing but did not meet our criteria for inclusion in this meta-analysis. Those who regard high-level control as key argue that confrontation (to resolve conflicts) and maturity demands (e.g., assignment of household chores) are critical ingredients of high control (Baumrind, 1975, 1989). Those who regard low-level control as key argue that it entails "avoid[ing] situations in which [the mother] might have to impose her will on [the child's]" and "minimal assistance" (Sroufe, Matas, & Rosenberg, 1981, p. 21; see also Lewis, 1981). Unfortunately, these high-level and low-level control behaviors have been infrequently investigated; thus, we were unable to assess the contributions that these potentially important behaviors make to patterns of caregiving.

⁹ Greater variability in externalizing for younger than for older children and for boys than for girls, as well as greater variability in caregiving scores for mothers than for fathers, could explain the greater caregiving–externalizing associations for older children, for boys, and for mothers. However, in all three cases the differences in variability were in the opposite direction. Findings from Achenbach's (1991, 1992) large normative sample indicate that the variability in externalizing scores is greater in younger children than in older children; this makes the greater associations for older children even more surprising. Similarly, with regard to gender, Achenbach reported slightly higher variability for girls than for boys. We are not aware of data indicating greater variability in caregiving scores of mothers than in those of fathers, and most studies have not reported variability in caregiving. The three studies that did (Bronstein, 1984; Hart, Dewolf, Wozniak, & Burts, 1992; Hoffman, 1960) indicated slightly greater variability in authoritarian–power assertion scores for fathers in comparison to mothers.

Influence of Child Gender

The findings did not indicate a simple gender difference in associations between parenting and externalizing behavior. Rather, the findings fit with Zaslow's (1989) differentiated view of gender effects. On the basis of a meta-analysis of the effects of divorce, Zaslow concluded that boys manifested more externalizing reactions than girls, but only for preadolescent children and only in mother-custody homes in which there was no stepfather. In the present meta-analysis, there were stronger caregiving-externalizing associations for boys than for girls, but only in studies of preadolescents and only in analyses involving mothers. The longitudinal findings supported this conclusion.

In her meta-analysis, Zaslow (1989) found that boys did not manifest more externalizing behavior than girls in postdivorce families involving a stepfather or father custody, which suggests that when fathers are important caregivers, divorce may not have more adverse effects on boys than on girls. Interestingly, only one of the four studies in this meta-analysis that examined gender differences in associations involving fathers found greater effects for boys than for girls. Although it is premature to make sound comparisons between mother- and father-custody homes or between maternal and paternal caregiving, the parallel between the sex difference found in Zaslow's review and that revealed in the present meta-analysis is intriguing. The parallel might be explained as follows: (a) The stress experienced by divorced parents, particularly custodial parents (usually mothers), is likely to adversely affect their caregiving (see Hetherington, Cox, & Cox, 1982, for a review; but see Buchanan, Maccoby, & Dornbusch, 1992, for qualifications), and (b) caregiving by (divorced) mothers is more closely associated with externalizing behavior in their sons than with such behavior in their daughters (cf. Fauber, Forehand, Thomas, & Wierson, 1990; Gottman & Fainsilber, 1989).

In support of this explanation, Fauber et al. (1990) found that the relationship between marital conflict and children's adjustment problems could be explained through disturbances in the parent-child relationship. Unfortunately, there is little understanding of why disturbances in the mother-child relationship would adversely affect boys more than girls (for reviews of cross-sex effects, see Rothbaum, Zigler, & Hyson, 1981; Rumenik, Capasso, & Hendrick, 1977). With regard to the consequences of maternal custody, it is important to consider adverse effects associated with the absence of two caregivers—for example, losses in management functions (Parke & Tinsley, 1987), monitoring (Patterson & Stouthamer-Loeber, 1984), and economic well-being (Elder & Caspi, 1988)—and gender-linked responses to these adverse effects (Conger et al., 1992).

Because Achenbach (1991, 1992) and other investigators have found greater mean externalizing scores for boys than for girls, it is possible that mean level of externalizing is somehow involved in the stronger associations for boys. Perhaps the extremely high level of externalizing characteristic of some boys ensnares parents in coercive cycles of behavior (Patterson, 1982). At lower levels of externalizing, parent behavior may be less tied to child behavior. Because Patterson's coercion theory further maintains that the coercive cycles are especially prevalent in interactions between preadolescent boys and their moth-

ers, this theory helps explain why the greater associations for boys than girls occurred only with maternal caregiving and only with preadolescent children.

The higher mean externalizing score for boys raises another possibility. Boys may be more genetically predisposed than girls to react to stress with externalizing behavior (Maccoby & Martin, 1983; Rutter, 1991). This genetic predisposition may take the form of reactance against repeated commands (cf. Brehm, 1981); because such commands are most likely to come from the primary caregiver, who is typically the mother, the mother is most likely to bear the consequences of boys' predisposition to externalizing. This example highlights the possible complexities of the interplay between genetic and environmental forces in contributing to gender differences (cf. Hinde, 1992).

Another possibility is that mothers react more negatively to externalizing displayed by sons than to such behavior displayed by daughters. Radke-Yarrow, Richters, and Wilson (1988) found greater maternal anger and aggression in response to sons' aggression than in response to daughters' aggression. Further analyses indicated that aggression in boys, in comparison with that in girls, was more highly associated with numerous unfavorable characteristics in the child's behavior (e.g., anger and low social competence), thus suggesting that mothers are responding to expectations regarding their sons' other aversive behaviors. This interpretation echoes Brunk and Henggeler's (1984) point, cited earlier, that over time parents develop expectations regarding their children's behavior. It also highlights the importance of bidirectional interactive influences on parent-child relations.

Influence of Parent Gender

This is the first review we know of in which child externalizing was more strongly associated with maternal than with paternal caregiving. The effect was modest but very consistent.¹⁰ The reason for the stronger effects for mothers than for fathers may simply be that, in most families, mothers are the primary caregivers. Children may be more influenced by and more likely to influence the caregiver who is most involved with them.

The mother-father differences were opposite those found by Loeber and Stouthamer-Loeber (1986) in their meta-analysis of caregiving and delinquency. Unlike us, Loeber and Stouthamer-Loeber focused on studies of clinic-referred and delinquent children. The incidence of extreme aggressiveness and abuse by fathers in samples of clinic children is much higher than in normal samples, in which it is rare (Farrington, 1986; J. McCord, 1979). The influence of fathers may be substantial in atypical populations by virtue of these extreme cases. It is also possible that delinquency is associated more with deviance in the father's personality or the paternal role model (assessed in the Loeber and Stouthamer-Loeber review) than with the specific paternal caregiving variables examined in this review (cf. J. McCord,

¹⁰ The caregiving-externalizing correlation was larger for mothers than for fathers in 12 of the 15 studies, and in 1 study the correlations were equal. In none of the studies was the difference in correlations reported as significant, which may explain why the difference has not been addressed in previous reviews.

McCord, & Howard, 1963; W. McCord, McCord, & Howard, 1961).

Differences in age may also account for Loeber and Stouthamer-Loeber's (1986) findings of greater associations involving fathers. Some 55% of the studies here were of preschoolers; Loeber and Stouthamer's review mainly involved older children and adolescents. Disruptions in the father-son relationship may be particularly disturbing for adolescents; efforts to affirm their masculinity may take the form of externalizing. Supporting this hypothesis is a meta-analysis by Stevenson and Black (1988) indicating that father absence accompanies aggressiveness in older boys but not in preschoolers. Because father nonresponsiveness and rejection also disrupt the father-son relationship, they too may be particularly disturbing for adolescent boys and particularly likely to lead to externalizing. Whatever the explanation, the conflicting findings from the two meta-analyses illustrate the need for separating analyses of clinical and delinquent samples from analyses of general population samples.

Although significant mother-father differences were obtained here, such differences may not apply to all realms of socialization. Given that mothers and fathers have very different types of influences on their children, future research may identify aspects of children's social functioning (e.g., achievement motivation and sex role development) that are more closely associated with fathers' than with mothers' caregiving (Block, 1978; Lamb, 1981), especially if developmental periods are taken into consideration.

Theoretical Implications: Reciprocity Theory

Each of the five main findings obtained here promote understanding of both parent-child relationships and methodologies for studying those relationships. Beyond the separate contributions of each of the findings, it is useful to try to identify a conceptual framework within which they can be integrated. We believe that reciprocity theory constitutes such a framework (Ainsworth et al., 1974; Bell & Chapman, 1986; Maccoby, 1992; Patterson & Bank, 1989).

In contrast to early theorizing about the parent-child relationship, which emphasized personality characteristics of parents in shaping the behavior of children in early childhood, more recent theories have emphasized the development of parent-child reciprocity and "linked streams of behavior" (Maccoby, 1992). According to reciprocity theorists, the quality of parents' responsiveness to children's needs, more than specific behaviors or characteristics of parents, fosters children's responsiveness to the expectations and desires of their parents. Our finding that patterns of caregiving behavior are the best predictors of externalizing is consistent with this claim in that patterns are more likely than specific behaviors to capture parents' responsiveness to their children's needs.

Another claim of reciprocity theory is that children are socialized through participation in close relationships that are constructed over time (Maccoby, 1992; Sameroff & Chandler, 1975). Although quality of interaction is key in reciprocity theory, sustained joint activity is necessary for the development of the coherent expectations, joint goals, shared scripts, and

shared meanings that maintain both parties' behavior (Maccoby, 1992; Radke-Yarrow et al., 1983). The present findings of strong parent-child associations with mothers and with older children support reciprocity theorists' claims that the socialization of child behavior is largely a function of interactions in close relationships that are constructed and sustained over time. A challenge for future research is to examine the development of mother-child reciprocity over time and how it relates to changes in the meaning and manifestation of externalizing behavior (see earlier discussion).

It is also possible that the weak findings for questionnaires may be partly attributable to their limited ability to assess reciprocity. According to reciprocity theorists, streams of behavior involving parental responsiveness to children's needs and children's adaptive (as opposed to externalizing) initiations and responses to their parents become interwoven with one another over time "so that the smooth continuation of one person's behavior depends on the partner's performing the reciprocal portion of the action" (Maccoby, 1992, p. 1014). The static nature of questionnaire items and of the responses they permit (i.e., the absence of probes, elaborations, or descriptions of interactions) makes them inadequate for assessing the interactive stream of behavior.

Finally, reciprocity theory can help explain why parent-child associations are strongest for preadolescent boys and their mothers. The high level of externalizing found in young children is particularly likely to stimulate reciprocal cycles involving parents' aversive responses to their children and the children's aversive responses to their parents (cf. Anderson et al., 1986; Patterson, 1982). Relatedly, reciprocal, self-fulfilling expectations may be particularly operative in dyads characterized by high levels of externalizing. Children with histories of high-level externalizing foster in their parents expectations of externalizing even when externalizing is contraindicated by the children's preceding behavior; these expectations, in turn, are likely to lead parents to behave in ways that trigger their children's externalizing (cf. Brunk & Henggeler, 1984). Thus, in a number of ways, the findings from the present meta-analysis are consistent with theories emphasizing reciprocal interaction.

Conclusions and New Directions

The caregiving-externalizing association is mediated by several factors examined in this meta-analysis, including child age and gender, parent gender, whether the measure of caregiving is a questionnaire, and whether it entails patterns of parent behavior. By highlighting the importance of these factors, the present review clarifies some of the inconsistencies in prior caregiving-externalizing associations.

Increasingly, investigators are calling for a family systems, as opposed to a dyadic, perspective on parent-child relations (e.g., Maccoby & Martin, 1983; Minuchin, 1985; Vuchinich, Emery, & Cassidy, 1988). The present meta-analysis indicates that the study of dyads can inform family systems research. Specifically, it raises questions about the factors contributing to father-child reciprocity and about why certain dyads (mother-son) are particularly charged with affect and whether they are more charged at certain points of development than others (Holmbeck & Hill,

1991). Moreover, it helps in refining questions about the interplay between subsystems or, in Hinde's (1992) terms, the "effects of relationships on relationships" (p. 1024). For example, it changes the question of how the marital dyad influences parent-child relations to whether the influence of marital functioning is mediated by parental acceptance-responsiveness; to the extent that it is, the present findings suggest that quality of marital functioning will have a greater influence on the mother-son relationship than on the father-son relationship. As we do, Hinde views understanding of dyadic relationships as a base for exploring systemic questions involving the effect of third parties, other relationships, and the sociocultural context.

We hope that the present findings will lead to meta-analyses of other caregiving-child behavior associations. In particular, we would be interested in comparing the present findings with findings from a meta-analysis of caregiving-internalizing associations. One study that reported consistent evidence of a caregiving-externalizing association found no evidence of a caregiving-internalizing association (Weiss et al., 1992). In some respects, findings for internalizing may run counter to those obtained here. For example, there is reason to suspect that the caregiving-internalizing association may be stronger for girls than for boys (Radke-Yarrow et al., 1988).

The meta-analysis described here also highlights the need for longitudinal and experimental studies. We found few longitudinal studies, and most of them yielded very weak findings. In the future, investigators should use complete longitudinal designs (assessments of mothers, fathers, and children at two or more time points) to further probe the age effects found in this meta-analysis. Experimental studies were rare but yielded strong findings; more such studies are needed to unravel the separate and combined influences of parents and children on one another and to shed light on the gender effects obtained in the concurrent studies. The encouraging findings of the present meta-analysis suggest that research that attends to these issues may enrich the understanding of the links between parent and child behavior.

References

- References marked with an asterisk indicate studies included in the meta-analysis.*
- Achenbach, T. M. (1991). *Manual for the CBC/4-18 and 1991 profile*. Burlington: University of Vermont.
- Achenbach, T. M. (1992). *Manual for the CBC/2-3 and 1992 profile*. Burlington: University of Vermont.
- Achenbach, T. M., & Edelbrock, C. S. (1981). Behavioral problems and competencies reported by parents of normal and disturbed children aged four through sixteen. *Monographs of the Society for Research in Child Development*, 46(11, Serial No. 188).
- Achenbach, T. M., McConaughy, S. H., & Howell, C. T. (1987). Child/adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin*, 101, 213-232.
- Ainsworth, M. D. S., Bell, S. M., & Stayton, D. J. (1974). Infant-mother attachment and social development: "Socialization" as a product of reciprocal responsiveness to signals. In M. P. M. Richards (Ed.), *The integration of the child into a social world* (pp. 99-135). Cambridge, England: Cambridge University Press.
- Anderson, K. E., Lytton, H., & Romney, D. M. (1986). Mothers' interactions with normal and conduct-disordered boys: Who affects whom? *Developmental Psychology*, 22, 604-609.
- *Armentrout, J. (1971). Parental child-rearing attitudes and preadolescents' problem behaviors. *Journal of Consulting and Clinical Psychology*, 37, 278-285.
- *Baldwin, A., Kalhorn, J., & Breese, F. H. (1945). Patterns of parent behavior. *Psychological Monographs*, 58(3, Whole No. 268).
- *Baldwin, D. V., & Skinner, M. L. (1989). Structural model for antisocial behavior: Generalization to single-mother families. *Developmental Psychology*, 25, 45-50.
- Bandura, A. (1977). *Social learning theory*. Morristown, NJ: General Learning Press.
- Bates, J. E., & Bayles, K. (1988). The role of attachment in the development of behavior problems. In J. Belsky & T. Nezworski (Eds.), *Clinical implications of attachment* (pp. 253-299). Hillsdale, NJ: Erlbaum.
- Bates, J. E., Bayles, K., Bennett, D. S., Ridge, B., & Brown, M. (1991). Origins of externalizing behavior problems at eight years of age. In D. J. Pepler & K. H. Rubin (Eds.), *The development and treatment of childhood aggression* (pp. 93-136). Hillsdale, NJ: Erlbaum.
- Bates, J. E., Maslin, C. A., & Frankel, K. A. (1985). Attachment security, mother-child interaction and temperament as predictors of behavior problem ratings at age three years. *Monographs of the Society for Research in Child Development*, 50(1-2, Serial No. 209).
- *Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology Monographs*, 4(1, pt. 2).
- Baumrind, D. (1975). Some thoughts about childrearing. In U. Bronfenbrenner & M. Mahoney (Eds.), *Influences on human development* (2nd ed., pp. 270-282). Hillsdale, IL: Dryden Press.
- Baumrind, D. (1983a, May). *Family socialization and developmental competence project*. Paper presented at the Social Science Research Council Conference on Intimacy, Berkeley, CA.
- Baumrind, D. (1983b). Rejoinder to Lewis' reinterpretation of parental firm control effects: Are authoritative families really harmonious? *Psychological Bulletin*, 94, 132-142.
- Baumrind, D. (1989). Rearing competent children. In W. Damon (Ed.), *Child development today and tomorrow* (pp. 349-378). San Francisco: Jossey-Bass.
- Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *Journal of Early Adolescence*, 11, 56-95.
- *Baumrind, D., & Black, A. E. (1967). Socialization practices associated with dimensions of competence in preschool boys and girls. *Child Development*, 38, 291-327.
- Becker, W. C. (1964). Consequences of different kinds of parental discipline. In M. L. Hoffman & L. W. Hoffman (Eds.), *Review of child development research* (pp. 169-208). Beverly Hills, CA: Sage.
- *Becker, W. C., & Krug, R. S. (1964). A circumplex model for social behavior in children. *Child Development*, 35, 371-396.
- Becker, W. C., Peterson, D. R., Luria, Z., Shoemaker, D. J., & Hellmer, L. A. (1962). Relations of factors derived from parent interview ratings to behavior problems of five-year olds. *Child Development*, 33, 509-535.
- Bell, R. Q., & Chapman, M. (1986). Child effects in studies using experimental or brief longitudinal approaches to socialization. *Developmental Psychology*, 22, 595-603.
- Billler, H. B. (1974). *Paternal deprivation: Family, school, sexuality and society*. Lexington, MA: Heath.
- *Bishop, B. M. (1951). Mother-child interaction and the social behavior of children. *Psychological Monographs: General and Applied*, 65(11, Whole No. 328).
- Block, J. H. (1978). Another look at sex differentiation in the socialization behavior of mothers and fathers. In J. Sherman & F. L. Denmark

- (Eds.), *Psychology of women: Future directions of research* (pp. 29–87). New York: Psychological Dimensions.
- Block, J. H., Block, J., & Morrison, A. (1981). Parental agreement-disagreement on child-rearing orientations and gender-related personality correlates in children. *Child Development, 52*, 965–974.
- *Bradley, R. H., Caldwell, B. M., & Rock, S. L. (1988). Home environment and school performance: a ten-year follow-up and examination of three models of environmental action. *Child Development, 59*, 852–867.
- Brehm, S. S. (1981). Oppositional behavior in children: A reactance theory approach. In S. S. Brehm, S. M. Kassin, & F. X. Gibbons (Eds.), *Developmental social psychology: Theory and research* (pp. 96–125). New York: Oxford University Press.
- *Bronson, W. C. (1966). Early antecedents of emotional expressiveness and reactivity control. *Child Development, 37*, 793–810.
- Bronstein, P. (1984). Differences in mothers' and fathers' behaviors toward children: A cross-cultural comparison. *Developmental Psychology, 20*, 995–1003.
- Bronstein-Burrows, P. (1981). Patterns of parent behavior: A cross-cultural study. *Merrill-Palmer Quarterly, 27*, 129–143.
- Brunk, M., & Henggeler, S. (1984). Child influences on adult controls: An experimental investigation. *Developmental Psychology, 20*, 1074–1081.
- Bryan, J. W., & Freed, F. W. (1982). Corporal punishment: Normative data and sociological and psychological correlates in a community college population. *Journal of Youth and Adolescence, 11*, 77–87.
- *Bryant, B. K., & Crockenberg, S. B. (1980). Correlates and dimensions of prosocial behavior: A study of female siblings with their mothers. *Child Development, 51*, 529–544.
- Buchanan, C. M., Maccoby, E. E., & Dornbusch, S. M. (1992). Adolescents and their families after divorce: Three residential arrangements compared. *Journal of Research on Adolescence, 2*, 261–291.
- Cadore, R. J., & Cain, C. (1980). Sex differences in predictors of antisocial behavior in adoptees. *Archives of General Psychiatry, 37*, 1171–1175.
- Clarke-Stewart, K. A. (1973). Interactions between mothers and their young children: Characteristics and consequences. *Monographs of the Society for Research in Child Development, 38*(6–7, Serial No. 153).
- Cloninger, C. R., Sigvardsson, S., Bohman, M., & von Knorring, A. L. (1982). Predisposition to petty criminality in Swedish adoptees. II. Cross-fostering analysis of gene-environment interaction. *Archives of General Psychiatry, 39*, 1242–1247.
- Conger, R. D., Conger, K. J., Elder, G. H., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1992). A family process model of family hardship and adjustment of early adolescent boys. *Child Development, 63*, 526–541.
- Coopersmith, S. (1967). *The antecedents of self-esteem*. San Francisco: Freeman.
- *Crandall, V. J., Orleans, S., Preston, A., & Rabson, A. (1958). The development of social compliance in young children. *Child Development, 29*, 429–443.
- *Crockenberg, S. (1987). Predictors and correlates of anger toward and punitive control of toddlers by adolescent mothers. *Child Development, 58*, 964–975.
- *Crockenberg, S., & Litman, C. (1990). Autonomy as competence in two-year-olds: Maternal correlates of child compliance, noncompliance, and self-assertion. *Developmental Psychology, 26*, 961–971.
- Elder, G. H., Jr., & Caspi, A. (1988). Economic stress in lives: Developmental perspectives. *Journal of Social Issues, 44*, 25–45.
- Ember, J. K. (1984). A cross-cultural perspective on sex differences. In R. H. Munroe, R. L. Munroe, & B. B. Whiting (Eds.), *Handbook of cross-cultural human development* (pp. 531–580). New York: Garland Press.
- Emery, R. (1984). Interparental conflict and the children of discord and divorce. In D. H. Olson & B. C. Miller (Eds.), *Family studies review yearbook* (Vol. 2, pp. 439–459). Beverly Hills, CA: Sage.
- *Eron, L. D., Banta, T. J., Walder, L. O., & Laulicht, J. H. (1961). Comparison of data obtained from mothers and fathers on childrearing practices and their relation to child aggression. *Child Development, 32*, 457–472.
- Farrington, D. P. (1986). Stepping stones to adult criminal careers. In D. Olweus, J. Block, & M. Radke-Yarrow (Eds.), *Development of antisocial and prosocial behavior* (pp. 359–384). San Diego, CA: Academic Press.
- Fauber, R., Forehand, R., Thomas, A. M., & Wierson, M. (1990). A mediational model of the impact of marital conflict on adolescent adjustment in intact and divorced families: The role of disrupted parent. *Child Development, 61*, 1112–1123.
- Feshbach, N. N., & Feshbach, S. (1982). Empathy training and the regulation of aggression: Potentialities and limitations. *Academic Psychology Bulletin, 4*, 399–413.
- Feshbach, S. (1970). Aggression. In P. H. Mussen (Ed.), *Carmichael's manual of child psychology* (pp. 159–259). New York: Wiley.
- Forehand, R. (1977). Child noncompliance to parental requests: Behavioral analysis and treatment. In M. Hersen, R. M. Eisler, & P. M. Miller (Eds.), *Progress in behavior modification* (Vol. 5, pp. 111–148). San Diego, CA: Academic Press.
- Fraiberg, S. H. (1959). *The magic years: Understanding and handling the problems of early childhood*. New York: Scribner's.
- Frankel, K. A., & Bates, J. E. (1990). Mother-toddler problem solving: Antecedents in attachment, home behavior, and temperament. *Child Development, 61*, 810–819.
- Glass, G. V., McGaw, B., & Smith, M. L. (1981). *Meta-analysis in social research*. Beverly Hills, CA: Sage.
- *Gordon, J. E., & Smith, E. (1965). Children's aggression, parental attitudes, and the effects of an affiliation-arousing story. *Journal of Personality and Social Psychology, 1*, 654–659.
- Gottman, J. M., & Fainsilber, K. L. (1989). Effects of marital discord on young children's peer interaction and health. *Developmental Psychology, 25*, 373–381.
- Grusec, J., & Kuczynski, L. (1980). Direction of effect in socialization: A comparison of the parent's versus the child's behavior as determinants of disciplinary techniques. *Developmental Psychology, 16*, 1–9.
- *Hart, C. H., Dewolf, D. M., Wozniak, P., & Burts, D. C. (1992). Maternal and paternal disciplinary styles: Relations with preschoolers' behavioral orientations and peer status. *Child Development, 63*, 879–892.
- *Hatfield, J. S., Ferguson, L. R., & Alpert, R. (1967). Mother-child interaction and the socialization process. *Child Development, 38*, 365–414.
- Hedges, L., & Olkin, I. (1985). *Statistical methods for meta-analysis*. San Diego, CA: Academic Press.
- *Heilbrun, A., & Orr, H. (1965). Maternal childrearing control history and subsequent cognitive and personality functioning of the offspring. *Psychological Reports, 17*, 259–272.
- Hetherington, E. M., Cox, M., & Cox, R. (1982). Effects of divorce on parents and children. In M. Lamb (Ed.), *Nontraditional families* (pp. 223–284). Hillsdale, NJ: Erlbaum.
- Hetherington, E. M., & Martin, B. (1986). Family factors and psychopathology in children. In H. Quay & J. Werry (Eds.), *Psychopathological disorders of childhood* (3rd ed., pp. 332–390). New York: Wiley.
- Hinde, R. A. (1992). Developmental psychology in the context of other behavioral sciences. *Developmental Psychology, 28*, 1018–1029.

- *Hoffman, M. L. (1960). Power assertion by the parent and its impact on the child. *Child Development*, 31, 129-143.
- *Hoffman, M. L. (1963). Parent discipline and the child's consideration for others. *Child Development*, 34, 573-588.
- Hoffman, M. L. (1970). Moral development. In P. H. Mussen (Ed.), *Carmichael's manual of child psychology* (Vol. 2, pp. 261-359). New York: Wiley.
- Holden, G. W., & Edwards, L. A. (1989). Parental attitudes toward child rearing: Instruments, issues, and implications. *Psychological Bulletin*, 106, 29-58.
- Holmbeck, G. N., & Hill, J. P. (1991). Conflictive engagement, positive affect, and menarche in families with seventh-grade girls. *Child Development*, 62, 1030-1048.
- *Inoff-Germain, G., Nottelman, E., Arnold, G. S., & Susman, E. (1988). Adolescent aggression and parent-adolescent conflict and relations between observed family interactions and measures of the adolescents' general functioning. *Journal of Early Adolescence*, 8, 17-36.
- Johannesson, I. (1974). Aggressive behavior among school children related to maternal practices in early childhood. In J. De Wit & W. W. Hartup (Eds.), *Determinants and origins of aggressive behavior* (pp. 413-425). Paris: New Babylon.
- Johnson, S., & Lobitz, G. (1974). Parental manipulation of child behavior in home observations. *Journal of Applied Behavior Analysis*, 7, 23-31.
- *Kagan, J., & Moss, H. A. (1962). *Birth to maturity: A study in psychological development* (pp. 10-49, 204-281). New York: Wiley.
- *Kuczynski, L. (1984). Socialization goals and mother-child interaction: Strategies for long-term and short-term compliance. *Developmental Psychology*, 20, 1061-1073.
- Kuczynski, L., Kochanska, G., Radke-Yarrow, M., & Ginius Brown, O. (1987). A developmental interpretation of young children's non-compliance. *Developmental Psychology*, 23, 799-806.
- Lamb, M. E. (1981). The development of father-infant relationships. In M. E. Lamb (Ed.), *The role of the father in child development* (2nd ed., pp. 459-488). New York: Wiley.
- Lamb, M. E., Ketterlinus, R. D., & Fracasso, M. P. (1992). Parent-child relationships. In M. H. Bornstein & M. E. Lamb (Eds.), *The developmental psychology: An advanced textbook* (3rd ed., pp. 465-518). Hillsdale, NJ: Erlbaum.
- Lamb, M. E., Pleck, J. H., Charnov, E. L., & Levine, J. A. (1987). A biosocial perspective on paternal behavior and involvement. In J. B. Lancaster, J. Altmann, A. S. Rossi, & L. R. Sherrod (Eds.), *Parenting across the life span: Biosocial dimensions* (pp. 111-142). New York: Aldine de Gruyter.
- *Lamborn, S. D., Mounts, N. S., Steinberg, L., & Dornbusch, S. M. (1991). Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development*, 62, 1049-1065.
- Lau, S., Lew, W. J., Hau, K., Cheung, P. C., & Berndt, T. J. (1990). Relations among perceived parental control, warmth, indulgence, and family harmony of Chinese in mainland China. *Developmental Psychology*, 26, 674-677.
- Lay, K. L., Waters, E., & Park, K. (1989). Maternal responsiveness and child compliance: The role of mood as a mediator. *Child Development*, 60, 1405-1411.
- Lefkowitz, M. M., Heusmann, L. R., & Eron, L. D. (1978). Corporal punishment: A longitudinal analysis of effects. *Archives of General Psychiatry*, 35, 186-191.
- Lewis, C. C. (1981). The effect of parental firm control: A reinterpretation of findings. *Psychological Bulletin*, 90, 547-563.
- *Lobitz, C. W., & Johnson, S. M. (1975). Parental manipulation of the behavior of normal and deviant children. *Child Development*, 46, 719-726.
- *Loeber, R., & Dishion, T. J. (1984). Boys who fight at home and school: Family conditions influencing cross-setting consistency. *Journal of Consulting and Clinical Psychology*, 52, 759-768.
- Loeber, R., & Stouthamer-Loeber, M. (1986). Family factors as correlates and predictors of juvenile conduct problems and delinquency. In M. Tonry & N. Morris (Eds.), *Crime and justice* (Vol. 7, pp. 219-339). Chicago: University of Chicago Press.
- *Londerville, S., & Main, M. (1981). Security of attachment, compliance and maternal training methods in the second year of life. *Developmental Psychology*, 17, 289-299.
- Lorr, M., & Jenkins, R. L. (1953). Three factors in parent behavior. *Journal of Consulting Psychology*, 17, 306-308.
- *Lytton, H. (1980). *Parent child interaction: The socialization process observed in twin and singleton families*. New York: Plenum.
- Lytton, H. (1990). Child and parent effects in boys' conduct disorder: A reinterpretation. *Developmental Psychology*, 26, 683-697.
- Maccoby, E. E. (1980). *Social development: Psychological growth and the parent-child relationship*. New York: Harcourt Brace Jovanovich.
- Maccoby, E. E. (1992). The role of parents in the socialization of children: An historical overview. *Developmental Psychology*, 28, 1006-1017.
- Maccoby, E. E., & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In P. H. Mussen (Ed.), *Handbook of child psychology: Socialization, personality, and social development* (Vol. 4, pp. 1-101). New York: Wiley.
- *Maccoby, E. E., Snow, M. E., & Jacklin, C. N. (1984). Children's dispositions and mother-child interaction at 12 and 18 months: A short-term longitudinal study. *Developmental Psychology*, 20, 459-472.
- Martin, B. (1975). Parent-child relations. In F. D. Horowitz (Ed.), *Review of child development research* (Vol. 4, pp. 463-540). Chicago: University of Chicago Press.
- *Martin, J. (1981). A longitudinal study of the consequences of early mother-infant interaction: A microanalytic approach. *Monographs of the Society for Research in Child Development*, 46(3, Serial No. 190).
- McCord, J. (1979). Some child-rearing antecedents of criminal behavior in adult men. *Journal of Personality and Social Psychology*, 37, 1477-1486.
- McCord, J., McCord, W., & Howard, A. (1963). Family interaction as antecedent to the direction of male aggressiveness. *Journal of Abnormal and Social Psychology*, 66, 239-242.
- McCord, W., McCord, J., & Howard, A. (1961). Familial correlates of aggression in nondelinquent male children. *Journal of Abnormal and Social Psychology*, 62, 79-93.
- McLaughlin, B. (1983). Child compliance to parental control techniques. *Developmental Psychology*, 19, 667-673.
- Mednick, S. A., Gabrielli, W. F., & Hutchings, B. (1987). Genetic factors and etiology of criminal behavior. In S. A. Mednick, T. E. Moffitt, & S. A. Stack (Eds.), *Causes of crime: New biological approaches* (pp. 74-91). Cambridge, England: Cambridge University Press.
- Miller, N., Cowan, P. A., Cowan, C. P., Hetherington, E. M., & Clingempeel, W. G. (1993). Externalizing in preschoolers and early adolescents: A cross-study replication of a family model. *Developmental Psychology*, 29, 3-18.
- Milton, G. A. (1958). A factor analytic study of childrearing behaviors. *Child Development*, 29, 381-392.
- *Minton, C., Kagan, J., & Levine, J. A. (1971). Maternal control and obedience in the two-year-old. *Child Development*, 42, 2873-2894.
- Minturn, L., & Lambert, W. W. (1964). *Mothers of six cultures*. New York: Wiley.
- Minuchin, P. (1985). Families and individual development: Provoca-

- tions from the field of family therapy. *Child Development*, 56, 289–302.
- Moustakas, C. (1974). *Children in play therapy*. New York: Ballantine Books.
- *Olson, S. L., Bates, J. E., & Bayles, K. (1984). Mother-infant interaction and the development of individual differences in children's cognitive competence. *Developmental Psychology*, 20, 166–179.
- *Olweus, D. (1980). Familial and temperamental determinants of aggressive behavior in adolescent boys: A causal analysis. *Developmental Psychology*, 16, 644–660.
- Parke, R. D., & Slaby, R. G. (1983). The development of aggression. In P. H. Mussen (Ed.), *Handbook of child psychology: Socialization, personality and social development* (Vol. 4, pp. 547–641). New York: Wiley.
- Parke, R. D., & Tinsley, B. J. (1987). Family interaction in infancy. In J. D. Osofsky (Ed.), *Handbook of infant development* (pp. 579–641). New York: Wiley.
- Parpal, M., & Maccoby, E. (1985). Maternal responsiveness and subsequent child compliance. *Child Development*, 56, 1326–1334.
- Patterson, G. R. (1980). Mothers: The unacknowledged victims. *Mono-graphs of the Society for Research in Child Development*, 45(5, Serial No. 186).
- Patterson, G. R. (1982). *A social learning approach to family intervention: III. Coercive family process*. Eugene, OR: Castalia.
- Patterson, G. R., & Bank, L. (1989). Some amplifying mechanisms for pathologic processes in families. In M. R. Gunnar & E. Thelen (Eds.), *Systems and development. The Minnesota Symposium of Child Psychology* (Vol. 22, pp. 167–209). Hillsdale, NJ: Erlbaum.
- *Patterson, G. R., Dishion, T. J., & Bank, L. (1984). Family interaction: A process model of deviance training. *Aggressive Behavior*, 10, 253–267.
- *Patterson, G. R., & Stouthamer-Loeber, M. (1984). The correlation of family management practices and delinquency. *Child Development*, 55, 1299–1307.
- *Peck, R. F., & Havighurst, R. J. (1962). *The psychology of character development*. New York: Wiley.
- Peterson, D. R., & Migliorino, G. (1967). Pancultural factors of parental behavior in Sicily and the United States. *Child Development*, 38, 967–991.
- *Pettit, G., & Bates, J. (1989). Family interaction patterns and children's behavior problems from infancy to 4 years. *Developmental Psychology*, 24, 413–420.
- Pfiffner, L., & O'Leary, S. (1989). Effects of maternal discipline and nurturance on toddlers' behavior and affect. *Journal of Abnormal Child Psychology*, 17, 528–540.
- Pleck, J. H. (1982). *Husbands' and wives' paid work, family work, and adjustment*. Wellesley, MA: Wellesley College Center for Research on Women.
- *Power, T. G., & Chapiesski, M. L. (1986). Childrearing impulse control in toddlers: A naturalistic investigation. *Developmental Psychology*, 22, 271–275.
- *Pulkkinen, L. (1982). Self-control and continuity from childhood to late adolescence. In P. B. Baltes & O. G. Brim, Jr. (Eds.), *Life-span development and behavior* (pp. 64–102). San Diego, CA: Academic Press.
- Radke-Yarrow, M., Richters, J., & Wilson, W. E. (1988). Child development in a network of relationships. In R. Hinde & J. Stevenson-Hinde (Eds.), *Relationships within families* (pp. 48–67). Oxford, England: Clarendon.
- Radke-Yarrow, M., Zahn-Waxler, C., & Chapman, M. (1983). Children's pro-social dispositions and behavior. In E. M. Hetherington (Ed.), *Handbook of child psychology: Vol. 4. Socialization, personality, and social development* (4th ed., pp. 469–546). New York: Wiley.
- Reid, W. J., & Crisafulli, A. (1990). Marital discord and child behavior problems: A meta-analysis. *Journal of Abnormal Child Psychology*, 18, 105–117.
- *Reid, J. B., Patterson, G. R., & Loeber, R. (1981). The abused child: Victim, instigator, or innocent bystander? In D. J. Bernstein (Ed.), *Nebraska Symposium on Motivation* (Vol. 19, pp. 47–68). Lincoln: University of Nebraska Press.
- Rocissano, L., Lynch, V., & Slade, A. (1987). Dyadic synchrony and toddler compliance. *Developmental Psychology*, 23, 698–704.
- Rohner, R. R. (1986). *The warmth dimension*. Newbury Park, CA: Sage.
- Rollins, B. C., & Thomas, D. L. (1979). Parental support, power and control techniques in the socialization of children. In W. R. Burr, R. Hill, F. I. Nye, & I. L. Reiss (Eds.), *Contemporary theories about the family* (pp. 317–364). New York: Free Press.
- Rosenthal, R., & Rubin, D. B. (1982). A simple, general purpose display of magnitude of experimental effect. *Journal of Educational Psychology*, 74, 166–169.
- Ross, A. O. (1981). *Child behavior therapy: Principles, procedures, and empirical basis*. New York: Wiley.
- *Rothbaum, F. (1986). Patterns of parental acceptance. *Genetic Social and General Psychology Monographs*, 112, 435–458.
- *Rothbaum, F. (1988). Maternal acceptance and child functioning. *Merrill-Palmer Quarterly*, 34, 163–184.
- Rothbaum, F., & Weisz, J. R. (1989). *Developmental clinical psychology and psychiatry: Vol. 17. Child psychopathology and the quest for control* (A. E. Kazdin, Series Ed.). Newbury Park, CA: Sage.
- Rothbaum, F., Zigler, E., & Hyson, M. C. (1981). Modeling, praising, and collaborating: Effects of adult behavior on children of the same sex and opposite sex. *Journal of Experimental Child Psychology*, 31, 403–423.
- Rumenik, D. K., Capasso, D. R., & Hendrick, C. (1977). Experimental sex effects on behavioral research. *Psychological Bulletin*, 84, 852–877.
- Rutter, M. (1991). A fresh look at 'maternal deprivation.' In P. Bateson (Ed.), *The development and integration of behavior* (pp. 331–374). Cambridge, England: Cambridge University Press.
- Sameroff, A. J., & Chandler, M. J. (1975). Reproductive risk and the continuum of caretaking casualty. In F. D. Horowitz, M. Hetherington, S. Scarr-Salapatek, & G. Siegel (Eds.) *Review of child development research* (Vol. 4, pp. 187–244). Chicago: University of Chicago Press.
- Schaefer, E. S. (1959). A circumplex model for maternal behavior. *Journal of Abnormal and Social Psychology*, 59, 226–235.
- Schaffer, H. R., & Crook, C. K. (1980). Child compliance and maternal control techniques. *Developmental Psychology*, 16, 54–61.
- Sears, R. R., Maccoby, E. E., & Levin, H. (1957). *Patterns of child rearing*. White Plains, NY: Peterson.
- Sears, R. R., Rau, L., & Alpert, R. (1965). *Stanford studies in psychology: Vol. 4. Identification and child rearing* (R. R. Sears, L. Festinger, & D. H. Lawrence, Series Eds.). Stanford, CA: Stanford University Press.
- *Sears, R. R., Whiting, J. W. M., Nowlis, V., & Sears, P. S. (1953). Some child-rearing antecedents of aggression and dependency in young children. *Genetic Psychology Monographs*, 47, 135–234.
- Shmukler, D. (1981). Mother-child interaction and its relationship to the predisposition of imaginative play. *Genetic Psychology Monographs*, 104, 215–235.
- Simons, R., Whitbeck, L. B., Conger, R. D., & Chyi-In, W. (1991). Intergenerational transmission of harsh parenting. *Developmental Psychology*, 27, 159–171.
- Sroufe, L. A., Matas, L., & Rosenberg, D. M. (1981). *Manual for scoring mother variables in tool-use tasks: applicable for two year old chil-*

dren. Unpublished manuscript, University of Minnesota, Minneapolis.

Staub, E. (1979). *Positive social behavior and morality: Socialization and development* (Vol. 2). San Diego, CA: Academic Press.

*Stayton, D. J., Hogan, R., & Ainsworth, M. (1971). Infant obedience and maternal behavior: The origins of socialization reconsidered. *Child Development, 42*, 1057-1069.

Steinmetz, S. K. (1979). Disciplinary techniques and their relationship to aggressiveness, dependency, and conscience. In W. R. Burr, R. Hill, F. I. Nye, & I. L. Reiss (Eds.), *Contemporary theories about the family* (pp. 405-438). New York: Free Press.

Stern, D. (1980). *The first relationship: Infant and mother*. Cambridge, MA: Harvard University Press.

Stevens-Long, J. (1973). The effect of behavioral context on some aspects of adult disciplinary practice and affect. *Child Development, 44*, 476-484.

Stevenson, M. R., & Black, K. N. (1988). Paternal absence and sex role development: A meta-analysis. *Child Development, 59*, 793-814.

Vuchinich, S., Emery, R. E., & Cassidy, J. (1988). Family members as third parties in dyadic family conflict: Strategies, alliances, and outcomes. *Child Development, 59*, 1293-1302.

*Ward, M. J., Vaughn, B. E., & Robb, M. D. (1988). Social-emotional adaptation and infant-mother attachment in siblings: Role of the mother in cross-sibling consistency. *Child Development, 59*, 643-651.

Weiss, B., Dodge, K. A., Bates, J., & Pettit, G. S. (1992). Some consequences of early harsh discipline: Child aggression and a maladaptive social information processing style. *Child Development, 63*, 1321-1335.

Westerman, M. A. (1990). Coordination of maternal directives with preschoolers' behavior in compliance-problem and healthy dyads. *Developmental Psychology, 26*, 621-630.

Whiting, B. B., & Edwards, C. P. (1988). *Children of different worlds: The formation of social behavior*. Cambridge, MA: Harvard University Press.

*Winder, C. L., & Rau, L. (1962). Parental attitudes associated with social deviance in preadolescent boys. *Journal of Abnormal and Social Psychology, 64*, 418-424.

Wolf, F. M. (1986). *Meta-analysis: Quantitative methods for research synthesis*. Newbury Park, CA: Sage.

*Yarrow, M. R., Campbell, J. D., & Burton, R. V. (1968). *Child rearing: An inquiry into research and methods*. San Francisco: Jossey-Bass.

Zaslow, M. J. (1989). Sex differences in children's response to parental divorce: Samples, variables, ages and sources. *American Journal of Orthopsychiatry, 59*, 118-141.

Received February 14, 1992
 Revision received October 29, 1993
 Accepted November 3, 1993 ■



**AMERICAN PSYCHOLOGICAL ASSOCIATION
 SUBSCRIPTION CLAIMS INFORMATION**

Today's Date: _____

We provide this form to assist members, institutions, and nonmember individuals with any subscription problems. With the appropriate information we can begin a resolution. If you use the services of an agent, please do NOT duplicate claims through them and directly to us. **PLEASE PRINT CLEARLY AND IN INK IF POSSIBLE.**

PRINT FULL NAME OR KEY NAME OF INSTITUTION _____		MEMBER OR CUSTOMER NUMBER (MAY BE FOUND ON ANY PAST ISSUE LABEL) _____	
ADDRESS _____		DATE YOUR ORDER WAS MAILED (OR PHONED) _____	
CITY _____ STATE/COUNTRY _____ ZIP _____		PREPAID _____ CHECK _____ CHARGE _____ CHECK/CARD CLEARED DATE: _____	
YOUR NAME AND PHONE NUMBER _____		(If possible, send a copy, front and back, of your cancelled check to help us in our research of your claim.) ISSUES: ___ MISSING ___ DAMAGED	
TITLE _____	VOLUME OR YEAR _____	NUMBER OR MONTH _____	
_____	_____	_____	
_____	_____	_____	

Thank you. Once a claim is received and resolved, delivery of replacement issues routinely takes 4-6 weeks.

(TO BE FILLED OUT BY APA STAFF)

DATE RECEIVED: _____	DATE OF ACTION: _____
ACTION TAKEN: _____	INV. NO. & DATE: _____
STAFF NAME: _____	LABEL NO. & DATE: _____

Send this form to APA Subscription Claims, 750 First Street, NE, Washington, DC 20002-4242

PLEASE DO NOT REMOVE. A PHOTOCOPY MAY BE USED.