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ABSTRACT

This metaanalysis examined different parental variables in order to determine which best predict children's externalizing behavior. Also examined were other variables that may influence the association of parenting and externalizing, such as type of child behavior, gender of parent and child, and age of child. Parental variables included in the analyses were approval, guidance, motivation setting, noncoercion, synchrony, affection, and miscellaneous behaviors. Findings indicated that several caregiving variables, namely, approval, guidance, motivation setting, noncoercion, and synchrony, significantly predicted absence of externalizing behavior. These variables better predicted absence of externalizing behavior when considered in combination than when considered individually. Boys' externalizing behavior was more associated with parental responsiveness than was girls'. This was especially the case among preadolescents who were with their mothers. Stronger parent-child associations were found for mothers than for fathers and for grade school children than for preschool children. It is concluded that the findings point to the importance of parental responsiveness and parent-child reciprocity. (Author/RH)

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

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Running Head: CAREGIVING AND EXTERNALIZING BEHAVIOR

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ABSTRACT

Prior reviews of the concurrent association between parental caregiving and child externalizing behavior conclude that the findings are inconsistent and frequently weak in magnitude. This meta-analysis examines different parental variables, considered alone and in combination, to determine which variables best predict children's externalizing behavior. Differences between boys and girls, mothers and fathers and preschool and grade school children are also examined. The findings indicate that several caregiving variables--approval, guidance, motivation-setting, noncoercion, and synchrony--significantly predict absence of externalizing behavior; moreover, these variables better predict absence of externalizing behavior when considered in combination than when considered individually. Boys' externalizing behavior, as compared to girls', is more associated with parental responsiveness--especially among preadolescents with their mothers. Stronger parent-child associations are found for mothers than for fathers and for grade school children than for preschool children. The findings point to the importance of parental responsiveness and parent-child reciprocity.

## Parental Caregiving and Child Externalizing Behavior

Almost all theories of child socialization posit a close association between parental caregiving and child externalizing behavior (see Hetherington & Martin, 1979; Maccoby & Martin, 1983; Patterson, 1980). A close association is assumed both by those who emphasize children's influence on parents (e.g., Anderson, Lytton & Romney, 1986; Bell, 1986) and those who emphasize parents' influence on children (e.g., Hoffman, 1970). Yet the conclusion from most reviews is that the association obtained is inconsistent from study to study and generally low in magnitude (e.g., Maccoby & Martin, 1983).

In this paper we perform a meta-analysis of evidence linking parental caregiving and child externalizing (aggressive, hostile, noncompliant) behavior. The latter is the most frequently investigated type of child social behavior in studies of parent-child relations. Our primary question is which parental behaviors or combinations of behaviors best predict child externalizing behavior. We also examine other variables--type of externalizing behavior, gender of parent and child, and age of child--which may influence the parenting-externalizing behavior association. In general, these variables have not been examined in previous meta-analytic reviews. It is possible, thus, that there are strong parenting-externalizing behavior associations, but only for certain parenting variables or child behaviors, or only for parents and children of one gender, or only for children at certain ages.

### Parental Caregiving Variables

A variety of parental caregiving variables have been associated with absence of children's externalizing behavior. Among the most commonly examined caregiving variables are approval, guidance, motivation-setting, noncoercion, affection and synchrony. These variables have been examined separately and in combination with one another (e.g., a measure of parental acceptance might incorporate several of the above variables). Yet there have been no systematic efforts that we know of to compare the effects associated with the different variables.

The need to investigate different caregiving variables is evidenced by controversies about what constitutes optimal caregiving. In particular, there are disagreements between investigators regarding the role of parental control. According to some investigators, control undermines standards that deter externalizing behavior:

We have shown that... specific efforts to train an infant, or otherwise consciously to push him into the desirable behavioral mould, tend to prolong behavior deemed to be changeworthy, whereas to accept him as he is...related both to infant compliance with maternal commands and with the beginnings of 'internalization' of prohibitions. (Ainsworth, Bell & Stayton, 1974, p. 120)

...attribution theory and its research...conclude that salient external control is negatively associated with internalization of standards. (Lewis, 1981, p. 547)

Other investigators maintain that parental control is critical in deterring externalizing behavior:

I believe that the imposition of authority even against the child's will is useful to the child during the first six years. Indeed, power serves to legitimate authority in the mind of the child...(and contributes to) responsible conformity. (Baumrind, 1975, pp. 280-282)

Firmer management (by parents) will tend to result in more effective inner controls...(Coopersmith, 1967, p. 187)

In this review we test the relative strength of relationship between child externalizing behavior and various caregiving variables. Since different socialization theories highlight different caregiving variables (see pp.11-15) testing the relative predictive strength of these variables may shed light on important controversies such as that involving parental control. We will also explore whether measures of caregiving involving multiple caregiving variables ("patterns") better predict child externalizing behavior than do measures assessing a single caregiving variable. Several authors suggest that there are caregiving variables which, in isolation of one another, have very limited predictive value, but which in combination are highly

predictive. While several investigators assume that patterns are better predictors than are single variables (e.g., Baumrind, 1989; Hetherington & Martin, 1979; Sroufe, Matas & Rosenberg, 1982; Strab, 1979), summaries of the relevant evidence are lacking.

#### Gender of Child

Sex differences in the association between parenting and externalizing behavior are often assumed because there is more data linking parenting with externalizing behavior for boys than for girls, at least in clinic populations. For example, Patterson and his colleagues' landmark work on coercive cycles, according to which parents and children trigger hostile, punitive responses from one another, has been based on the study of boys only. Since the focus on males may simply reflect the relative scarcity of females in clinic populations, it does not prove that there are stronger associations for males than for females. However, there is evidence from research on adult criminal behavior that environmental effects are greater influences on the behavior of males than of females (Baker, Mack, Moffitt & Mednick, 1989; Mednick, Brennan & Kandel, 1989).

Although there are not reviews of sex differences in the association between caregiving and child externalizing behavior, there are reviews of sex differences in the association between parental discord and child externalizing behavior (Block, Block & Morrison, 1981; Emery, 1984; Reid & Crisafulli, in press). In general, the reviews indicate that sons are more adversely affected by parental discord than are daughters. A common explanation of

this finding is that parental discord leads to less effective caregiving and that boys' behavior is more tied to parental caregiving than is girls' behavior (cf. Gottman & Fainsilber, 1989). However, this interpretation has not been directly tested.

In a recent meta-analysis of studies on children's responses to divorce, Zaslow (1989) found evidence to support a "differentiated view" of sex differences. According to Zaslow, sons are more adversely affected by divorce than are daughters, but only when the children are preadolescent and only when they are living with an unremarried mother. If the adverse influence of marital discord is mediated by less effective caregiving, this qualification of the divorce findings has important implications for the present review. Specifically, it suggests that there may be stronger parental caregiving-child externalizing behavior associations for boys than for girls, but only for preadolescent children in interactions with their mothers.

#### Gender of Parent

To our knowledge, comparisons of parenting-externalizing behavior associations for mothers versus fathers have not been a focus of theory. Since in most families mothers are the primary caretakers, it is reasonable to hypothesize that the associations with mothers are stronger than with fathers. Even when the mother is employed outside of the home, fathers spend about one-third the time that mothers do in direct contact with their children (Lamb, Pleck, Charnov, & Levine, 1987).



On the other hand, there are reasons to expect that fathers have greater influence than do mothers. First, fathers play an especially prominent role in interactions involving discipline (Larab, 1981). Second, a greater amount of externalizing behavior is exhibited by adult male than by adult female models (Ember, 1984). Third, father presence is a major correlate of children's control of aggression (Biller, 1974; Lamb, 1981). These findings suggest the possibility that the caregiving-externalizing behavior associations are greater for fathers than for mothers. In the only meta-analytic study that we know to have addressed this issue, Loeber and Stouthamer-Loeber (198X) found stronger effects for fathers than for mothers. However, their sample of studies differed from the sample employed in the present meta-analysis in that the former included studies of clinic-referred children.

#### Age of Child

As with the mother-father comparison, we are not aware of previous comparisons based on the age of the child. Two competing hypotheses are explored here: (a) Parent-child associations are strongest in early childhood when there are fewer competing socialization influences (e.g., teachers, peers). The relative exclusivity of parental influence at young ages may reduce the "noise" from other influences, resulting in child behavior that more faithfully reflects the parents' behavior. By the same token, the great amount of time and energy that parents spend in interaction with young children (Pleck, 1982) may bring the parents' behavior more in line with the child's. (b) Associations

are strongest later in childhood due to cumulative, reciprocal influences of each member of the dyad on the other. Even if the influence of parents and children is greatest at young ages, their influence on one another continues over time, contributing to increasingly reciprocal interactions as reflected in greater associations between quality of parental caregiving and absence of externalizing behavior. Moreover, the influence of each party on the other may be less manifest during the period of rapid growth characteristic of early childhood than during relatively stable periods later in childhood.

#### Summary of Objectives

In this paper we perform a meta-analysis of evidence linking parental behavior to child externalizing (i.e., aggressive, hostile, and noncompliant) behavior. While our primary question is which parental behaviors or combinations of behaviors best predict child externalizing behavior, we examine other variables which may influence the parenting-externalizing behavior association, such as type of child behavior, gender of parent and child and age of child. Since most prior reviews have not been quantitative in nature, they may have overlooked small but consistent differences in the effects associated with these variables.

#### Selection of Parental Caregiving Variables

In this section we describe the parental caregiving variables to be included in the meta-analysis and the rationale for selecting them. We also present factor analytic findings involving these variables. The factor analytic findings are relevant to the issue

of which caregiving variables to combine into patterns of caregiving. The meta-analysis, which follows the present section, tests the predictive strength of these patterns relative to the individual variables comprising them.

### Selection criteria

Several criteria were adopted in selecting parental caregiving variables to be included in this review. First, only parental behaviors, not characteristics of parents, were considered. We did not include items involving the success of the parents' behavior (e.g., effectiveness of policy), attributes of parents (e.g., depression), the parents' roles and relationships (e.g., mother responsible for financial matters), or parental perceptions and attitudes (e.g., values time spent with child). Second, the variables selected were those which had been most often studied in relation to child externalizing behavior in the past. Variables were selected only if they were examined in at least 5 of the 36 studies of parent-child associations included in this review. Third, an effort was made to define behavioral variables at the mid-level of the specificity - generality continuum: They are broad enough to ensure a relatively small number of conceptually meaningful variables, and narrow enough to ensure respectable interrater reliability in differentiating between them. Using these criteria, six variables were identified.

### Description of Variables

Below we describe the behaviors included in each parental variable and theories that emphasize each variable. The variables

included in the meta-analysis are: approval, guidance, motivation setting, noncoercion, and synchrony. Although some of the variables are partially overlapping, we consider them here as discrete categories.

Approval. This is the most frequently examined parental variable. Unfortunately, many studies do not clearly specify how they define approval. Of those that do, some focus more on verbal approval, such as praise, and others more on nonverbal approval, such as smiling and nodding. The common component seems to be an attempt to highlight, via positive responses, desirable behaviors or characteristics of the child. It is a variable that, in some form, is incorporated in almost all socialization theories.

Guidance. Guidance refers to the helpfulness of assistance and direction. Guidance is most often operationalized as explanations, but it includes several other behaviors that facilitate the child's understanding: providing clear and consistent<sup>1</sup> messages that direct the child toward desired behavior, preparing and setting up the environment, pacing and grading of information, and demonstrating. Despite the breadth of this category, it has not received as much attention as several of the others. We consider these behaviors together as a single variable because they have not been adequately differentiated from one another in the studies from which we draw. 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), parental "quality of assistance" (e.g., Sroufe, Matas & Rosenberg, 1981) and parental "control." Of those emphasizing control, some focus on the consistency of guidance (e.g., Baumrind, 1971, 1983b; Lytton, 1980) and others on whether the guidance is sensitive to the child's behavioral and cognitive state (e.g., McLaughlin, 1983; Schaffer & Crook, 1980).

Motivation setting. Motivation setting refers to greater reliance on positive than on negative incentives, and on incentives which are reasonable and fair (e.g., earned privileges, time out for disruptive behavior). Also scored as motivation setting are behaviors and affective displays which highlight the positive versus negative aspects of a situation (e.g., focusing on desirable consequences as opposed to relying on threats.) Motivation setting is most emphasized by social learning theorists. While approval can be incorporated within the definition of motivation setting, we treat approval as a separate variable because it is analyzed separately in many of the studies we review.

Noncoercion. The dimension coercion-noncoercion refers to the presence vs. absence of behaviors such as commands and force. Noncoercion is the attempt to influence the child by fostering the child's sense of choice. Examples of noncoercion include giving suggestions and presenting options. Noncoercion is often not differentiated from permissiveness (e.g., Hoffman, 1960; Kuczynski, 1987; Martin, 1981; Stayton et al., 1971), but we do not score noncoercion unless the focus is on the parent's attempt to

influence the child by giving choice. Although noncoercion relates in some ways to autonomy-giving, we do not treat autonomy-giving as an instance of noncoercion unless the autonomy-giving is in the context of attempting to influence the child. Noncoercion is highlighted by attachment theorists (e.g., Sroufe et al., 1981), by socialization theorists who emphasize democratic forms of parenting (e.g., Baldwin, Kalhorn, & Breese, 1945; Hoffman, 1970; Rollins & Thomas, 1979), and by attribution theorists (e.g., Brehm, 1981).

Synchrony. Synchrony refers to behavior which is congruent with--i.e., maintains the perspective of--the child's behavior. 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, Lynch & Slade, 1987; Stern, 1980). Concepts that are at least partially overlapping with synchrony are availability, democracy, empathy, involvement, openness, participation, and sensitivity. Although related to noncoercion, synchrony is primarily concerned with parental responses to child initiations rather than with parental initiations. The concept of synchrony had been most emphasized by humanists (e.g., Fraiberg, 1959; Moustakas, 1974) and attachment theorists (e.g., see Ainsworth et al.'s, 1974, concept of sensitivity).

Affection. A number of investigators rely on this composite category, without clearly identifying its components. In many cases affection includes approval and motivation setting; in some

cases it also includes aspects of the other variables. In our review of factor analytic studies, we treat affection as a separate variable when its components are not explicitly identified. We did not make assumptions about affection in the factor analytic studies because it was so prevalent and often poorly described. In the meta-analysis of parent-child studies, by contrast, affection is more clearly described, and it is coded as an instance of the variable(s) to which it is explicitly linked. Positive affect and warmth are regarded as synonyms for affection because these terms are used interchangeably in the literature.

Miscellaneous behaviors. There are several behaviors, such as dependency-fostering, directiveness, love withdrawal<sup>2</sup>, maturity demands, and restrictiveness-permissiveness which figure prominently in the theoretical literature on parent-child relationships, but which did not meet the criterion that they be examined in five or more studies. We suspect that these behaviors have been omitted from studies linking parenting and externalizing behavior in part because they are difficult to operationalize.

#### Factor Analytic Studies of Parental Caregiving

We review factor analytic studies of parental behavior to shed light on relationships between the parental variables just defined. These relationships are relevant to the issue of "patterns" of behavior, in that they indicate which variables interrelate and which are independent of one another.

In searching for factor analytic studies, we included only those relying on observations or interviews with probes about



specific situations (e.g., the Sears et al., 1957, interview). We excluded studies relying on child reports or simple self reports that allowed parents to, in effect, rate their own behavior. In general, these types of measures have poor validity. Factor analytic studies were obtained by the same method used in the meta-analysis which is described in detail on p. 19. Briefly, the studies were obtained via computer based information searches, using the key words parent and childrearing, and via relevant reviews. Of the 19 factor analytic studies found, seven were dropped, two because they relied on child reports and five because they relied on simple self reports. Of the remaining 12 studies, five relied upon observational ratings in the home or lab, (Baumrind, 1983a; Bronstein-Burrows, 1981; Clarke-Stewart, 1973; Lorr & Jenkins, 1953; Stayton, Hogan & Ainsworth, 1971), five were based on interviews (Becker, Peterson, Luria, Shoemaker & Hellmer, 1962; Milton, 1958; Minturn & Lambert, 1964; Peterson & Migliorino, 1967; Sears, Maccoby & Levin, 1957), and two were based on both observations and interviews (Schaefer, 1959; Shmukler, 1981). The children of the parents in these studies had a mean age of 5.25 years, with a range from 9 months to 11.5 years.

Despite diverse methods and populations, a fairly consistent picture emerges from the data: In all 12 studies there is one factor, frequently referred to as acceptance-rejection, on which at least two and usually more of the variables described above load highly. (For each study we adopted the cutoff for high loading specified by the investigator. Since, in most studies, loadings of



.40 were considered high, .40 was adopted as the cutoff when none was specified.) This "acceptance" factor typically accounts for the largest portion of variance in the factor analysis. In most of the studies, there are one or two factors that are orthogonal to acceptance and that are most commonly referred to as "control." Similar conclusions regarding factor analytic findings have been drawn by others (Becker, 1964; Maccoby & Martin, 1983; Martin, 1975; Rollins & Thomas, 1979).

To determine how much each variable was represented in the acceptance factors, two judges examined the items loading heavily on each factor. The judges, both of whom were female graduate students in the field of child study, classified the items from all 12 acceptance factors into one of eight variables. The eight variables consisted of the seven defined earlier and a miscellaneous variable which included behaviors which did not belong to any of the other variables. Examples of items that were classified as belonging to each variable are provided in Table 1. The interrater agreements for the eight variables, estimated by Cohen's Kappa, ranged from .77 to .89. In cases of disagreement about behavioral variables, a final decision was reached via discussion of the judges. If either (or both) judge(s) classified an item as belonging to the miscellaneous category it was scored as miscellaneous, so as to obtain a liberal estimate of the percentage of items not pertaining to the seven variables described above. Still, the percentage of miscellaneous items was low (11%).

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Insert Table 1 about here  
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Table 1 indicates the number of factors with items belonging to each behavioral variable and the total number of items belonging to each variable. A majority of the 12 acceptance factors we reviewed include behaviors belonging to the approval, guidance, motivation-setting and synchrony variables. These variables always load in the positive direction on the acceptance factor. Also heavily represented in the acceptance factor is affection; this variable loaded positively on 10 of the 12 acceptance factors. The variable noncoercion, although examined in only four studies, loaded positively on the acceptance factor in all four.

Consistent with conclusions from other reviews, we found evidence of a parental control factor that is independent of acceptance. Although the labels of this factor vary, the dimension of restrictiveness-permissiveness is salient. In fact, six studies had a factor labeled restrictiveness, strictness, permissiveness, lenience or freedom. Given the prominence of this factor it is surprising that the restrictiveness-permissiveness variable has been examined in so few studies investigating the caregiving-externalizing behavior association. Restrictiveness-permissiveness has been a component of several caregiving measures employed in these studies. However, the criterion for inclusion in the meta-analysis was that the variable be examined separately from other

caregiving variables in at least five studies and restrictiveness-permissiveness did not meet that criterion.

### Acceptance and Control

A major conclusion from previous reviews of factor analytic research on parent behavior is that acceptance and control are independent factors (e.g., Becker, 1964; Maccoby & Martin, 1983; Martin, 1975; Rollins & Thomas, 1979). Unfortunately, previous investigators have not sufficiently distinguished between aspects of control that load on the control factor (such as restrictiveness-permissiveness) and other aspects of control, such as guidance and motivation-setting, which in the factor analytic studies load on the acceptance factor.

The distinction frequently drawn between acceptance and control may obscure important similarities between the two constructs. As just noted, the acceptance factor incorporates certain types of control; moreover, aspects of acceptance such as approval, noncoercion and synchrony, which are less often thought of as types of control, may enable the parent to exert substantial influence. These variables can be seen to foster (a) positive regard for parents and thus a willingness to be led by them (e.g., Pappal & Maccoby, 1985; Patterson, 1980); (b) feelings of security and autonomy which reduce the perception of others as threatening and as needing to be resisted (e.g., Ainsworth et al., 1974; Rocissano, et al., 1987); and (c) learning, via modeling, of a harmonious pattern of interaction (e.g., Bandura, 1977).

The factor analytic findings have, unfortunately, not been taken into account by many investigators. Few studies examine patterns of parenting that include all of the variables that load on the acceptance factor. For example, guidance is typically treated as unrelated to the other variables, as evident in operationalizations of "acceptance" which do not include guidance (e.g., Rohner, 1986; Rollins & Thomas, 1979). Also inconsistent with the factor analytic findings are operationalizations of control which include guidance and motivation setting and which are treated as independent of acceptance (e.g., Baumrind, 1967; Rollins & Thomas, 1979). These formulations of acceptance and control seemingly do not take into consideration the factor analytic findings. Interestingly, two investigators who conducted factor analytic studies indicated that they were surprised that guidance loaded on the acceptance factor (Baumrind, 1983a; Sears et al., 1957). Apparently, there is something that is not intuitively obvious, and that is tempting to ignore, about these empirically-derived relationships. In the meta-analysis which follows, we draw from the factor analytic findings in that we examine a pattern of caregiving that includes all of the variables which have loaded on the acceptance factor.

## META-ANALYSIS OF PARENT-CHILD STUDIES

### Method

#### Retrieval of Studies

We conducted a literature search for published studies presenting quantitative data on the parental caregiving/child

externalizing behavior association, involving mothers and/or fathers, and children from infancy to adolescence. A computer-based information search was conducted on the Psyc-INFO and ERIC data bases. The key words used in the searches were childrearing, discipline, parent, aggression, antisocial behavior, behavior problems, conduct problems, externalizing, hostility, and noncompliance. In addition, relevant reviews (Becker, 1964; Hetherington & Martin, 1979; Maccoby & Martin, 1983; Martin, 1975; Radke-Yarrow, Zahn-Waxler & Chapman, 1983; Rollins & Thompson, 1979; Steinmetz, 1979) were used to initiate reference trails to pertinent investigations, and recent issues of journals in which relevant studies are reported were hand searched to locate studies not yet incorporated into the computerized data bases.

Inclusion criteria. To be included in the meta-analysis, a study had to meet certain criteria. First, the study had to employ measures of parental caregiving and of child externalizing behavior that were consistent with our behavioral variables (see pp. 20-22). 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; time sequential, experimental and longitudinal designs were not included. We excluded them because they differ in important ways from concurrent studies and there are too few of them to allow for adequate tests between them. (However, we will briefly review findings regarding longitudinal studies in a later draft of this manuscript). Fourth, we excluded studies relying on child or parent questionnaire

measures of parental behavior, because there is little evidence of validity of such measures; moreover, parent questionnaire measures have recently been reviewed elsewhere (Holden, 1989). Interviews of parents were included, but only if the interviews included probes about parent behavior in specific situations (a feature not included in questionnaires), and only if they focused on parental behavior as opposed to parental values and beliefs. Fifth, studies of clinic or other special samples of children (e.g., abused, high risk) or parents (e.g., depressed) are not included. Studies of extreme groups are likely to yield higher magnitude effects and may yield different effects than would be obtained in the general population (cf. Lytton, 1990). In the Discussion, we will compare the present findings to findings from a recent meta-analysis of clinic-referred children (Loeber & Stouthamer-Loeber, 1986). It was possible to adopt the above criteria--which are more stringent than those in previous reviews--in part because of an increase in the number of methodologically sound studies in recent years.

Parental caregiving variables. Descriptions of the variables and the rationale for selecting them were presented earlier. The variables are approval, guidance, motivation setting, noncoercion, and synchrony.<sup>3</sup>

The same two judges who coded the items in the factor analytic studies coded the measures from the studies in the meta-analysis. The judges coded the parent measures in all 36 studies for the six parental variables. Each parent measure could be coded for as few

as one and as many as five parent variables. For example, a measure of parental democracy, defined as inviting child's input, providing explanations, and avoiding force, would be coded for synchrony, guidance, and noncoercion, respectively. (Other examples of the coding of parent measures are presented in Table 1.) The interrater agreement for the five variables, estimated by Cohen's Kappa, averaged .80 with a range of .72 to .90. In cases of disagreement, the judges discussed their differences so as to reach a final decision.

Child externalizing behavior. Externalizing behavior refers here to aggression (e.g., fighting, bullying, cruelty), hostility (e.g. anger, tantrums) and noncompliance (e.g., disobedient, oppositional and negativistic behavior). We focus on these behaviors because: (a) they are the ones that have been most frequently examined in previous studies of parent-child associations, and (b) they typically load on the externalizing factor in factor analytic studies of children's problem behaviors (e.g., Achenbach & Edelbrock, 1981). High correlations between externalizing and noncompliance have been reported by Kagan & Moss (1962); Crandall, Orleans, Preston, & Rabson (1958); and Sears, Rau, & Alpert (1965). Besides aggression, hostility and noncompliance, we include composite measures of externalizing behavior (cf. Achenbach & Edelbrock, 1981).

Two judges coded the 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 focused on a single, specific externalizing behavior, such as failure to delay gratification, lying, stealing or cheating are not included because there are only a few such studies that meet the criteria for inclusion in this review. We also do not include "negative affect," since the latter typically entails sadness as well as anger. Finally, we have not included prosocial behaviors except in those few instances where prosocial has been defined as the opposite of one of our four externalizing variables (e.g., friendly versus hostile). Evidence of a negative relationship between prosocial and antisocial/externalizing behavior is not consistent (e.g., Feshbach & Feshbach, 1982).

Study sample. A total of 36 studies spanning a period from 1945 to 1989 were found to be appropriate for use in the meta-analysis. The mean age of the children in these studies was 5.3 years, with a range from 10.5 months to 15.5 years. Obviously, the meaning of externalizing behavior may be very different for children of such different ages; indeed, one of the objectives of the meta-analysis was to examine age differences. All of the studies involved mothers; 15 of the studies also involved fathers. Only ten of the latter studies provided separate data for mothers and fathers; the other five provided data regarding "parents."



Nine of the studies relied exclusively on interviews of parents; 10 relied upon both interviews and observations and the remaining 17 relied on observations only. A listing of studies is found in the Appendix.

Information extracted. The following information was extracted from the studies: (a) sample size; (b) mean age of children; (c) type of parenting variables and the effects (average size and significance) for each variable that was assessed in isolation (i.e., not in a measure which combined several variables); (d) separate effects for combinations of two, three, four and five of the caregiving variables; (e) separate effects for each of the four types of child behaviors (aggression, hostility, noncompliance and externalizing); (f) separate effects for boys and girls (available for 10 studies only); and (g) separate effects for mothers and fathers (available for 10 studies only).

#### Computation and Analysis of Effects

The majority of studies expressed the parenting-externalizing behavior association in terms of Pearson's product moment correlation ( $r$ ). In those studies in which a correlation was not available, estimates were devised using procedures found in Glass, McGaw, and Smith (1981); Rosenthal and Rubin (1982); Rosenthal (1984) and Wolf (1986). When investigators reported nonsignificant effects, there was sometimes insufficient information to compute an effect size. A common, though conservative, strategy is to assign

an  $r$  of 0.0 (indicating no association) in such cases. The results reported are based on this conservative approach.

The original correlations relevant to the meta-analysis totaled several hundred for the 36 studies. Some studies had as few as one correlation and one 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 the 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 they contain. Instead, relevant correlations in each study were averaged 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 and these scores were themselves averaged. In this way, each study is given equal weight.

The averaging just described pools significant and non-significant 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  $n$ 's, as occurred in the present analysis. Also, averaging correlations across studies does not

provide a measure of how many studies actually supported a given hypothesis. For these reasons, an additional measure was developed consisting of the percentage of significant correlations ( $p < .05$ ) of the total relevant correlations reported in a given study. For example, if the study reported five relevant correlations, of which two were significant, the percentage of significant correlations for that study would be .40.

Besides analyses in which each study is weighted equally, we performed analyses in which each study was weighted in proportion to its sample size. The two sets of analyses yielded very similar findings. The analyses based on equal weighing of each study are reported here because it was not generally the case that the large sample studies employed the better methods, (i.e., multi-methods and/or multi-measures of assessment).

### Results

The mean study effect size ( $r$ ) and the mean percentage of significant effects per study (%) for all 36 studies were .27 and .51, respectively. That is, the near average correlation between the parent measure and the child externalizing measure was .27. Using an ANOVA, there were no significant differences between the effect sizes for the interview, observation, and interview plus observation studies. An ANOVA comparing the effect sizes ( $r$ ) associated with the four different types of child behavior variables--noncompliance, aggression, hostility and general externalizing behavior--also yielded nonsignificant differences ( $p > .20$ ). Therefore, in subsequent analyses, correlations involving

different child measures were not treated separately. Parallel ANOVAs, with the percentage of significant effects (%) rather than effect sizes ( $\eta^2$ ) as the dependent variable, were also nonsignificant.

#### Differences Between Caregiving Variables

In analyzing the effect sizes associated with the five different parent variables, we first considered measures tapping individual variables. That is, measures of parenting that reflected two or more variables were not included in this analysis. The one-way ANOVA examining differences between the five variables in study effect sizes ( $\eta^2$ ) was not significant,  $p > .20$ ; the corresponding ANOVA for percentage of significant effects was in the same direction was also not significant,  $p > .20$ . The means are presented in Table 2. An analysis of the percentage of significant effects for each variable indicated that the percentage was significantly greater than the 5% significant effects expected by chance in all cases.

#### Differences Between "Patterns" of Caregiving

The preceding analyses only examine variables separately from one another. We also sought to test claims that patterns of caregiving variables are better predictors of child behavior than are individual variables. In these new analyses, the measures were categorized into five groups corresponding to the number of variables they assessed (i.e., one through five). The decision to incorporate all of the variables in one pattern was based on the factor analytic findings. The ANOVA indicated

significant differences between these groups in study effect size,  $F(4,53) = 2.56$ ,  $p < .05$ , and borderline significant differences for % significant effects,  $F(4,53) = 2.27$ ,  $p < .10$ . The means, presented in Table 3, reflect the generally increasing study effects, which were captured by the significant linear contrasts: for  $r$ ,  $t = 3.8$ ,  $p < .005$ ; for % significant,  $t = 3.8$ ,  $p < .005$ . As expected, the study effects were strongest for parent measures assessing all five variables. The low study effects accompanying measures assessing two and three variables may be due to the fact that several of these measures were poorly articulated. For example, a measure of democratic caregiving that was not described in detail would be scored as synchronous (incorporating child's input), and as noncoercive (providing choices as opposed to using force) because it suggests these variables; however, a more detailed description might make clear that only one or the other of these variables is involved. By contrast, measures that were coded as four or five variables were, in all cases, well described and clearly multifaceted.

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Insert Table 2 about here  
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#### Differences Between Boys and Girls

The analysis of sex differences, based on the 10 studies that reported separate effects for boys and girls, was in the predicted direction,  $r_{boys} = .22$ ;  $r_{girls} = .11$ ; % significant for boys = 38; % significant for girls = 19. However neither  $t$  was

significant,  $.10 < p < .15$  in both cases. Based on findings from Zaslow's (1989) meta-analysis, we performed a subsequent analysis in which only data involving mothers and only studies with preadolescent children were employed ( $n = 9$  studies). These analyses were significant: for  $r$ ,  $t(8) = 2.25$ ,  $p < .05$  and for % significant,  $t(8) = 2.53$ ,  $p < .05$ . The mean effect sizes for boys and girls were .25 and .07, respectively; the mean % significant effects were 48 and 17, respectively. These findings indicate that, for mothers' with their preadolescent children, quality of caregiving is more highly associated with absence of externalizing in boys than in girls.

#### Differences Between Mothers and Fathers

The difference between effects for mothers and fathers, also based on 10 studies, was highly significant;  $t(9) = 5.61$ ,  $p < .001$ . The mean effect sizes for mothers and fathers were .35 and .23 respectively. The mean % significant effects were 71 and 40, respectively,  $t(9) = 3.61$ ,  $p < .01$ . It appears that mothers' quality of caregiving, as compared to fathers', is more closely associated with absence of externalizing.

#### Differences Between Younger and Older Children

To test for effects of age, children were divided into two groups: 0 to 5 years and 6 years to adolescence. This division was chosen because it corresponds to the time of entry to school; it was a convenient division because there are no studies with mean ages between 5 and 6 years. There were 27 studies employing 0 to 5 year olds and 9 studies employing 6-year olds to

adolescents. The difference between the groups was significant for both study effect size,  $F(1,37) = 5.19, p < .05$ , and for percentage of significant effects,  $F(1,37) = 6.11, p < .05$ . Means for the younger and older age groups for  $r$  were .23 and .36 respectively, and for % significant were 37 and 65 respectively. A closer examination of the differences in effects across ages indicated very similar mean effects for infants (ages 18 months and younger:  $r = 29$ ) and preschoolers (ages 2 to 5:  $r = 20$ ), and for grade schoolers (ages 6 to 11.5:  $r = 36$ ) and adolescents (ages 12 and older:  $r = 39$ ).

#### Discussion

This review sheds light on the concurrent association between parental caregiving and child externalizing behavior. Significant differences in effects were obtained for patterns of parental behavior vs individual parental behaviors, for boys vs girls, for mothers vs fathers, and for older vs younger children. The findings point to qualifications in the conclusion that parenting-externalizing associations are weak in magnitude and they suggest reasons for inconsistencies in prior studies. In this section we will explore the meaning of these different effects.

Results from this study indicate that there are a variety of caregiving variables, including approval, guidance, motivation-setting, noncoercion and synchrony, which are associated with the absence of child externalizing behavior. Moreover the findings point to the existence of a pattern of



caregiving, involving all of the above variables, which is an even better predictor of child well-being than are the individual variables. These findings highlight the need for a conceptual framework which explains the predictive strength of the different caregiving variables and of the pattern comprising them.

In seeking to understand how different caregiving variables are associated with children's externalizing behavior, investigators have increasingly relied upon the construct of parental responsiveness. Responsiveness is emphasized by investigators adhering to such diverse orientations as attachment theory (Ainsworth, 1974), social learning theory (Patterson, 1989) and other prominent theories of parent-child relations (e.g., Baumrind, 1939; Maccoby & Martin, 1983). According to these investigators, parents who are sensitive 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. As a consequence, they will be less likely to resort to socially unacceptable behaviors such as externalizing. Child effects on parents may also be operative: children who refrain from externalizing behaviors may foster their parents' efforts to be sensitive and responsive to their needs. Externalizing behavior may reduce parents' motivation to be sensitive and may deprive parents of opportunities to be responsive. This bidirectionality of influence between responsive caregiving and absence of externalizing behavior



suggests that, overtime, the two will come to be closely associated with one another.

The responsiveness construct helps explain the present findings. Manifestly different caregiving variables predict absence of child externalizing behavior because they may have a common underlying characteristic--parental sensitivity and responsiveness to children's needs. Together these variables are an even better predictor of child behavior because the overall pattern may address a variety of child needs. Moreover, it is possible that measures of caregiving that tap several responsiveness variables heighten raters' awareness of the issue of sensitivity and responsiveness. Raters are more likely to ignore this issue, or to attend to superficial aspects of it, when scoring specific behaviors associated with a single responsiveness variable (e.g., praise, which is associated with approval) than when attempting to score multiple aspects of responsiveness.

An assumption underlying the above interpretation is that all five of the caregiving variables included in this study are aspects of responsiveness. Unlike us, most investigators link the responsiveness construct only to those variables that entail little or no control (e.g., synchrony). In addition to linking responsiveness to variables entailing low control, we link it to variables entailing high amounts of positive parental control (e.g., guidance, motivation setting). We assume that parents are not able to exert positive control unless they are responsive.

For example guidance requires that parents be attuned to the child's need to understand the environment and that parents tailor the timing, quantity and nature of information and interventions accordingly. In support of this notion, several investigators have demonstrated that parents are best able to guide their child when they are sensitive and responsive to the child's cognitive and behavioral cues (e.g., McLaughlin, 1974; Schaeffer & Crook, 1971). Similarly, motivation-setting, which is usually regarded as a type of control as opposed to responsiveness, is likely to be effective to the extent that the reinforcements employed make sense to and are compelling to the individual child. The factor analytic findings reviewed earlier, indicate that both the low control and high control caregiving variables included in this study are interrelated. One reason these variables may interrelate--what they may have in common--is that they all address fundamental child needs.

The responsiveness construct suggests a resolution to the controversy between those who emphasize the beneficial effects of high and low control. There are instances in which responsiveness entails behavior that is high in control and times when it entails behavior that is low in control. Both the parent who guides the child with consistent limits (high control) and the parent who synchronously accommodates the child's initiatives in a play situation (low control) is being responsive. In both cases it is the parent's sensitivity to the child's needs that underlies the parent's behavior. That is, guidance is sensitive

to the child's need to understand parental expectations and how to accomplish goals, and synchrony is sensitive to the child's need to be understood, acknowledged and to have his/her initiatives respected.

High and low control as defined above are not opposing forces; rather, they are mutually reinforcing and together are best able to lessen externalizing behavior. When a parent exercises positive forms of high control (e.g., guidance), children will be receptive to the parent's control and they are more likely to behave in ways (e.g., absence of externalizing) that enable the parent to exercise positive forms of low control (e.g., synchrony). Conversely, when a parent exercises positive forms of low control, children are more likely to feel validated and to behave in ways that make it easier for the parent to exercise positive forms of high control.

While an emphasis on the multifacetedness of responsiveness may resolve differences between those arguing for high and low control, important differences still remain. Those who regard control as key do not just emphasize guidance and motivation-setting; they also argue that confrontation (to resolve conflicts) and maturity demands (e.g., assignment of household chores) are critical ingredients of optimal caregiving (cf. Baumrind, 1989). Those who regard control as problematic, by contrast, argue that optimal caregiving entails "avoid(ing) situations in which (the mother) might have to oppose her will on his (the child's)" and "...nearly always giving (the child) what

he indicates he wants" (Ainsworth, 1976, p.xx). Even Sroufe, who borrows heavily from Ainsworth but who also argues for the importance of guidance, defines guidance in such a way that it entails "minimal assistance" (Sroufe et al., 1982, p. xx; see also Lewis, 1981).

Unfortunately, the present meta-analysis does not allow for definitive conclusions regarding the controversy over parental control. The critical behaviors at issue (e.g., maturity demands; avoiding confrontations) have been infrequently investigated and both their separate contributions and their contributions to the overall pattern of caregiving have not been analyzed. It would seem that the burden of proof lies with theorists advocating these positions.

The findings did not indicate a simple sex difference in parenting-externalizing behavior associations. Rather, the findings support a differentiated view of sex differences: There are stronger associations (between quality of caregiving and absence of externalizing) for boys than for girls only in studies employing mothers and only in studies of preadolescents. In her meta-analysis of children's responses to divorce, Zaslow (1989) found that girls actually manifest more externalizing behavior than boys in post divorce families involving a stepfather or father custody, suggesting that when fathers are primary givers, divorce has more adverse effects on girls than boys.

Interestingly, in a post hoc analysis, we found a trend toward stronger associations (between quality of caregiving and absence

of externalizing) for girls than for boys when fathers were examined. Although the latter findings were based on only three studies and were not significant, the parallel between the sex difference in mother vs father custody homes reported by Zaslow, and the sex difference with mothers vs fathers that we obtained is noteworthy. The parallel might be explained as follows: (a) the high level of stress experienced by divorced parents, particularly custodial parents who are usually mothers, is likely to adversely affect their caregiving (see Hetherington, Cox and Cox, 1982, for a review); (b) negative (unresponsive) caregiving is most likely to lead to externalizing behavior in children of the opposite sex. That is, divorce leads to stress and to negative caregiving in mothers, which in turn leads to externalizing behaviors primarily in their sons. Findings of cross-sex effects in socialization are not new (see Rothbaum, Hyson & Zigler, 1981; Rumenik, Capasso & Hendrick, 1977, for reviews) but neither are they well understood. Further theory and research is needed to probe these gender-based interactions.

The present meta-analysis & Zaslow's meta-analysis suggest that the greater effect of negative maternal caregiving on boys than girls is true only for pre-adolescents. The age difference may be related to the greater demands placed on boys than girls to differentiate from their mothers. The demands may induce particular stress and resentment in those boys who are not given the maternal care and support needed to accomplish the differentiation expected of them. This stress and resentment may

be greatest in earlier childhood--the period when dependency needs are strongest and thus, most in conflict with countervailing pressures to differentiate.

This is the first study or review of studies we know of in which child externalizing behavior was depicted as more strongly associated with maternal than with paternal caregiving. The effect is very consistent: In 9 of the 10 studies, the  $r$  was between 1.3 and 2.1 times larger for mothers than for fathers; (in the tenth study the  $r$ 's were equal). However, in none of the studies was the difference in  $r$ 's reported as significant. These mother-father differences may simply be due to the fact that, in most families, mothers are the primary caregivers. That is, children may be more influenced by and more likely to influence the caregiver who is most involved with them. This interpretation suggests that studies employing more involved fathers should find smaller differences between correlations involving mothers and fathers; in those homes where fathers are the primary caregivers, the differences should be reversed.

The present findings may have implications for the growing controversy regarding the effects of fulltime versus parttime parental caregiving. The findings suggest that interactions between quality of caregiving and parttime/fulltime may be more important than parttime/fulltime per se. Specifically, we should test whether fulltime parental caregiving, as compared to parttime parental caregiving, leads to more positive functioning (e.g., less externalizing behavior) for children of parents

exhibiting high quality caregiving and to more negative functioning for children of parents exhibiting low quality caregiving.

The present mother-father findings are opposite those obtained by Loeber and Southamer-Loeber (198 ) in their meta-analysis of caregiving and delinquency. One possible reason for the difference in findings is that the latter investigators employed studies of clinic -referred children. Fathers may play a relatively greater role in extreme cases of externalizing behavior than in more typical cases. Another possible reason for the difference is that we relied exclusively on studies employing direct assessments of the fathers whereas most of the studies in Loeber and Stouthamer's review employed maternal or child assessments of the fathers' behavior. It is possible that family members perceive fathers' behavior to be more closely associated with their children's externalizing behavior than it actually is.

Although significant mother-father differences were obtained here, it should not be assumed that such differences apply to all realms of socialization. Given that mothers and fathers have very different types of influences on their children (Hoffman, 1981; Lamb, 1981), we suspect that future research may identify aspects of children's social functioning which are more closely associated with fathers' than with mothers' caregiving.

From a developmental perspective, perhaps the most important finding of this study was that the association between quality of caregiving and absence of externalizing behavior is greater for



older children and adolescents than for infants and preschoolers. The findings for age lend partial support to a cumulative-reciprocity model of parent-child influence, according to which parents and children are continually influencing one another and, over time, their behavior becomes increasingly reciprocal. However, it did not appear that the data fit a simple linear trend: there were similar associations for infants and preschoolers, and for grade schoolers and adolescents. The major dynamic appears to be an increase in associations from the preschool to the grade school years. The two studies which employed both of these age groups (Crandall et al., 1958; Kagan & Moss, 1962) support this conclusion.

In retrospect, we would attribute the low effects for preschoolers to the fact that externalizing behaviors such as noncompliance and aggression are much more "developmentally appropriate" in the preschool years, and thus are less likely to reflect negative caregiving. In some cases quality caregiving may actually lead to an increase in externalizing behaviors if it fosters preschoolers' burgeoning self-confidence, feelings of autonomy and corresponding self assertion. However, as the child matures and he or she has more capacity to assert him or herself in socially acceptable ways, high quality caregiving is likely to be associated with a decrease in externalizing forms of self assertion.

One implication of this developmental view is that the effects of high quality caregiving on absence of externalizing



behavior may be delayed--they may not manifest themselves until the child has attained more sophisticated social-cognitive skills. For example, the beneficial effects of quality caregiving may suddenly emerge around ages five to seven because of dramatic developments in the capacity for internal standards of behavior at that time (Nicholls & Miller, 1984)--standards that can regulate externalizing behavior. Such delayed effects, which have been reported by others (e.g., Bishop & Rothbaum, 1989; Loeber & Stouthamer-Loeber, 1986; Wallerstein, 1989), may complement cumulative reciprocity effects, with both contributing to stronger parent-child associations at older ages.

Longitudinal research, and research employing developmentally based measures of externalizing behavior (cf. Crockenberg & Litman, 1989; Kuczynski, Kochanska, Radke-Yarrow & Girnius-Brown, 1987), are needed to test these hypotheses.

In summary, the relationship between parental caregiving and child externalizing behavior may be mediated by several of the factors examined in this meta-analysis, including whether caregiving entails patterns of parent behavior or individual parental behaviors, the gender of parent and child and the age of the child. When these factors are considered, stronger and more consistent effects emerge as do important clues as to processes underlying the caregiving-externalizing relationship.

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Appendix

Studies included in meta-analysis

Baldwin, Kalhorn & Breese (1945)  
Baumrind (1971)  
Baumrind & Black (1967)  
Becker & Krug (1964)  
Bishop (1951)  
Bronson (1966)  
Bryant & Crockenberg (1980)  
Crandall, Orleans, Preston &  
    Rabson (1958)  
Crockenberg (1987)  
Hatfield, Ferguson & Alpert (1967)  
Hoffman (1960)  
Hoffman (1963)  
Inoff-Germain, Nottelman,  
    Arnold & Susman (1988)  
Kagan & Moss (1962)  
Kuczynski, Kochanska, Radke-Yarrow  
    & Girnius-Brown (1987)  
Lobitz & Johnson (1975)  
Loeber & Dishion (1984)  
Londerville & Main (1981)  
Lytton (1980)  
Maccoby, Snow & Jacklin (1984)

Martin (1981)  
Minton, Kagan & Levine (1971)  
Olsen, Bates & Bayles (1984)  
Patterson, Dishion & Bank (1984)  
Patterson & Stouthamer-Loeber (1984)  
Peck & Havighurst (1962)  
Power & Chapieski (1986)  
Pulkkinen (1982)  
Reid, Patterson & Loeber (1981)  
Rocissano, Lynch & Slade (1987)  
Rothbaum (1986)  
Rothbaum (1988)  
Sears, Whiting, Nowlis  
& Sears (1953)  
Stayton, Hogan & Ainsworth (1971)  
Ward, Vaughn & Robb (1988)  
Yarrow, Campell & Burton (1968)

Footnotes

<sup>1</sup>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 not 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) lack of 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 operationalizing some of the definitions (e.g., congruent messages) may account for the limited empirical scrutiny of this variable.

<sup>2</sup>"Love withdrawal" has been used to refer to chronic, insensitive deprivations of affection and to occasional, sensitive time outs for unacceptable behavior. Given the variability in definition, we decided not to include this behavior.

<sup>3</sup>There are two reasons why affection was a variable in the examination of factor analytic studies but not in the meta-analysis. First, affection was more prevalent in the factor analytic studies. Second, affection was poorly described in these studies, and thus difficult to code as other variables. By contrast, descriptions of affection in the studies from the meta-

analysis were detailed and made clear how affection related to other variables.

Table 1

Variables Loading On Acceptance Factors

Variable	Examples of items coded as belonging to this variable	Number of factors with one or more items belonging to this variable	Total number of items belonging to this variable
Approval	praise, (-)ridicule, approve, encourage	10	16
Guidance	reasoning, clarity of policy, explains	8	11
Motivation setting	rewards, (-)threatens, (-)punishes	7	11
Noncoercion	(-) orders, (-)coercive, (-) physical interference	4	6
Synchrony	attentive, responsive, participates, sensitive	11	29

Table 1 (con't.)

Affection	affection, warmth	10	15
Misc.	equalitarianism, (-)directive, rewards, social stimulation, (-)strict, use of tangible, (-)withdrawal of love	7	12

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Note: A minus sign means that the variable in question loaded negatively.

Table 2

Study Effects for Caregiving Variables

Variable	Number of studies in which variable was present	Mean study effect size ( $\bar{r}$ )	Mean percentage of significant effects per study %
Approval	6	11.7	24.3%
Guidance	10	27.2	52.0%
Motivation setting	7	20.7	33.4%
Noncoercion	9	20.3	30.4%
Synchrony	13	27.9	43.9%

Note. 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 here.



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

Type of measure	Number of studies	Mean study effect size ( $\bar{r}$ )	Mean percentage of significant effects per study (%)
Variables separately	25	26.2	43.9
Combination of two variables	19	20.0	37.8
Combination of three variables	5	21.2	50.0
Combination of four variables	4	41.3	75.0
Combination of five variables	5	47.0	83.4