Published in final edited form as:

Early Child Dev Care. 2010 January ; 180(1-2): 107–119. doi:10.1080/03004430903414752.

Positive Aspects of Fathering and Mothering, and Children's Attachment in Kindergarten

Melissa R.W. George and E. Mark Cummings

Psychology, University of Notre Dame

Patrick T. Davies

Clinical & Social Sciences in Psychology, University of Rochester

Abstract

Past research suggests that maternal and paternal parenting processes differentially contribute to children's adjustment. However, the contribution of paternal warmth and responsiveness, to childhood attachment security is less understood, especially beyond the preschool years. The current study examined relations between parenting and attachment among 236 families with children in kindergarten. Parental warmth was virtually unrelated to attachment security and avoidance with mothers and fathers, while paternal and maternal responsiveness to children's emotional distress were uniquely predictive of father- and mother-child attachments, respectively. Although less responsive parenting was related to insecure attachment for both mothers and fathers, the parenting mechanisms associated with insecure attachment differed. Low paternal responsiveness was linked with continuous and categorical assessments of insecure-avoidant attachment, while low maternal responsiveness was associated with insecure-ambivalent attachment. Further research is needed to delineate why these patterns differ for fathers and mothers in order to understand fathers' unique effects on childhood attachment.

Keywords

attachment; parenting; fathers; parent child relationships; family relationships

Although substantial evidence supports the importance of fathers in children's development (Lamb & Tamis-LaMonda, 2004), many questions remain about the specific pathways through which fathering contributes to children's relationships in families, particularly in the early school years. Children are known to be affected by fathering in the context of the marital relationship in this age period; for example, deficits in the interparental relationship are known to cause strain on the father-child relationship and negatively affect children's emotional security about the stability of the family (Cowan & Cowan, 2009; Cummings, Goeke-Morey & Raymond, 2004; Goeke-Morey & Cummings, 2007). The fathering framework for understanding the impact of fathers in the family context further suggests that in addition to these indirect processes, fathers also impact children directly. Fathering may have a direct effect as a function of the impact of specific dimensions of father-child relations on children's attachment (Owen & Cox, 1997) although the implications for children's security in parent-child relationships beyond infancy are surprisingly rarely examined (Lamb & Tamis-LaMonda, 2004).

Understanding the unique effects of fathers on children necessitates examining this broader family context, thus the role of mothering must also be considered in understanding the unique impact of fathers (Fagot & Kavanagh, 1993; Suess, Grossman & Sroufe, 1992). Research has suggested that parenting among mothers and fathers may be similar given shared parenting characteristics in the same family (Braungart-Rieker, Garwood, Powers,

and Wang, 2001) and, consequently, may contribute to concordance in children's attachment to mothers and fathers (Fox, Kimmerly, and Schafer, 1991). However, research has also supported that mother's and father's parenting differ (Barnett, Deng, Mills-Koonce, Willoughby & Cox, 2008; Lewis & Lamb, 2003) particularly in contributing to the development of attachment security (Volling & Belsky, 1992); although, the preponderance of research has concerned parent-infant attachments. Thus, as researchers have noted the importance of accounting for the quality of mothering in understanding the unique effect of fathering on child adjustment (Parke et al., 2004), it is also essential to consider mothering in understanding the impact of fathering on attachment. Thus, the pathways through which positive parenting contribute to children's attachment relationships for both fathers and mothers are less understood, especially beyond the preschool years.

Compared to studies of relations between mothering and attachment, relatively few studies have examined the effect of specific dimensions of fathering on children's attachment (e.g., Belsky, 1996; Grossmann, et al., 2002). While maternal sensitivity is believed to determine the security of mother-child attachment, less is known about the antecedents of father-child attachment, even in infancy, although research has also shown some support, although a weaker association, for the role of paternal sensitivity (Van IJzendoorn & De Wolff, 1997). In particular, associations between fathering and attachment appear to be strongest in the context of sensitive and challenging play (Goossens & Van IJzendoorn, 1990; Grossmann, Grossmann, Kindler, & Zimmermann, 2008) suggesting mechanisms associating parenting and attachment may differ for fathers and mothers. However, the impact of other positive parenting behaviours on attachment have been less well-examined, so their role in contributing to understanding differences for attachments with fathers and mothers requires further study.

While the security of attachment relationships is relatively stable, the security of attachment is expected to be amenable to change as a function of children's changing experiences (Bowlby, 1969/1982), that is, there is lawful discontinuity in attachment (e.g., Bar Haim, Sutton, Fox & Marvin, 2000; Belsky, Campbell, Cohn & Moore, 1996; Egeland & Farber, 1984; Frodi, Grolnick & Bridges, 1985; Waters, 1978). Research has supported systematic relations between mothering and mother-child interactions and attachment during the preschool and early childhood years (Moss, Cyr, Bureau, Tarabulsy & Dubois-Comtois 2005; Moss, Cyr & Dubois-Comtois, 2004; Moss, Rousseau, Parent, St-laurent & Saintonge, 1998). Recent advances have supported that predictable aspects of fathering are also associated with children's attachment among preschoolers (Newland, Coyl & Freeman, 2008), although little is known about relations between father's parenting and children's attachment in the preschool years. Identifying the impact of fathers in the family context has been neglected in this age period, including the role of fathers on children's attachment.

Recent work has especially called attention to the fact that multiple dimensions of parenting impact children's development (e.g., Kaczynski, Lindahl, Malik, & Laurenceau, 2006). Relatedly, there is increasing recognition of the need to further differentiate the effects of specific aspects of parenting on specific components of child functioning (Davidov & Grusec, 2006). In particular, aspects of positive parenting have been increasingly identified as important factors contributing to positive outcomes for children, suggesting the importance of addressing empirically gaps in the study of positive parenting.

Although global dimensions of positive parenting have been related to the quality of parent-child attachment (Goldberg, Grusec & Jenkins, 1999), a next step is to further differentiate the role of specific dimensions of positive parenting (Davidov & Grusec, 2006). Parental *warmth*, the extent to which parents are affectionate and express positive affect in interactions is a specific dimension of positive parenting that has been related to children's

adjustment (e.g., Rohner, Saavedra, & Granum, 1991). In addition, parental *responsiveness*, the parent's ability to respond appropriately, promptly and consistently to children, has also been associated with positive outcomes for children (Bornstein, Tamis-LeMonda, Hahn & Haynes, 2008; Eisenberg, Cumberland & Spinrad, 1998). Although both are positive dimensions of parenting, parents' warmth and responsiveness are distinct in the differing skills and internal resources a parent may possess and utilize in the different situational contexts that elicit warmth or responsiveness.

Further, another potentially important difference is that parent's expressions of warmth are non-contingent forms of reinforcement while responsiveness is specifically tied with children's signals or cues of distress; thus, both may contribute, but in dissimilar ways, to children's social and emotional development. Notably, Grusec, Goodnow and Kuczynski (2000) have suggested that parental warmth and responsiveness contribute to the internalization of different values and affect the parent-child relationship in dissimilar ways. Warmth may contribute to the child's wanting to comply and please the parent, responsiveness may provide children with confidence in the parents' ability to make reasonable demands and meet the child's needs. Thus, research has supported that parental warmth may be more closely linked with children's social functioning, including social reciprocity (Bugental, 2000), the socialization of positive affect and peer relations (Davidov & Grusec, 2006) while responsiveness to distress may better predict attachment security (Carmen, Pederson, Huffman & Bryan, 1993), negative affective regulation and prosocial behaviours (Davidov & Grusec, 2006). However, these relations between parenting and child adjustment have been investigated primarily with regard to mother child relationships. The impact of these parenting processes for fathers is less understood.

The current study seeks to further examine the role of fathering in attachment relationships in kindergarten, including how fathers', as well as mothers', positive parenting influence children's attachment relationships in two-parent families. This study uniquely examines relationships between specific aspects of fathers' and mothers' positive parenting (e.g., warmth, responsiveness), respectively, and children's attachment relationships with fathers and mothers. Thus, the central aim is to explicate further the unique relationship between positive aspects of fathering and young children's attachment relationship with fathers. As we have argued, in order to understand the unique impact of fathers in the family context, mothering and mother-child attachment also need to be examined; consequently, this is also accomplished in this study.

Based on previous research suggesting parenting processes may differ for fathers and mothers, it was expected that differences would be found for mothers and fathers in the specific linkages between attachment and parental warmth and responsiveness. It was hypothesized that while parental warmth has been consistently linked to various positive outcomes, including positive affect regulation and social aspects of child adjustment, it may not be as closely linked with attachment as responsiveness in this age period. It was expected, however, especially given the extensive links reported between responsiveness and security of parent-child attachment (e.g., DeWolff & van IJzendoorn, 1997) in infancy, parental responsiveness would predict the security of both father-child and mother-child attachments in kindergarten. Thus, the following research questions were examined for families with kindergarten children:

- 1) How do father's warmth and responsiveness to children's distress, respectively, relate to children's attachment with fathers?
- 2) How do mother's warmth, and responsiveness to children's distress, respectively, relate to children's attachment with mothers?

- 3) Does fathers' warmth, and/or responsiveness to children's distress, uniquely relate to children's attachment beyond the shared influences of mother's warmth, and responsiveness?
- 4) Does mothers' warmth, and/or responsiveness to children's distress, uniquely relate to children's attachment beyond the shared influences of father's warmth, and responsiveness?

Method

Participants

Participants were 236 community-recruited families from the Midwestern and Northeastern areas of the United States, including father, mother, and their kindergarten age child, taking part in a multi-site longitudinal study examining the effects of family process on child adjustment (see Cummings, Schermerhorn, Davies, Goeke-Morey, & Cummings, 2006). Eligibility to participate necessitated that the family lived together for at least 3 years, had a child enrolled in kindergarten, and could complete assessments in English. Families participated in two visits to the Family Studies Center, where they participated in assessments in a laboratory setting designed to replicate a home atmosphere, (about 2 weeks apart) when children (55% female) were in kindergarten ($M\text{ age}=6.00$, $SD=.45$). Children were racially representative of the community they lived in with 70.7% White, 14.8% Black, and 14.5% indicated other identifying with other ethnicities. The majority of couples were married (88.1%) and cohabitating for an average of 11 years ($SD=4.9$). The family's median and mean annual income was between \$40,000–\$54,999 (range from below \$6,000 to above \$75,000). Caregivers included biological mothers (94.5%) and fathers (87.7%) of the child participant, as well as a small number of stepparents, adoptive parents, a live in girlfriend/boyfriend, or other guardian figure (a relative who had legal custody).

Procedure and Measures

Parental Warmth—Mothers and fathers reported on their own and their partner's warmth in parenting on the Parental Acceptance/Rejection Questionnaire (PARQ; Rohner, Saavedra, & Granum, 1991). Parents reported on 20 items reflecting the occurrence of warm and affectionate behaviours. Sample items included 'you/your partner take a real interest in your child's affairs' and you/your partner talk to your child in a warm and affectionate way.' Parent's self and partner reports were averaged yielding composite maternal warmth and paternal warmth variables to reduce reporter bias.

Parental responsiveness to children's emotional distress—Mothers and fathers completed the non-supportive subscales of the Coping with Children's Negative Emotions Scale (CCNES) (Fabes, Eisenberg, & Bernzweig, 1990). Parents indicated the likelihood of responding to children's displays of negative affect in ways that are not supportive, including reacting punitively toward the child, minimizing the child's distress, and reacting with one's own distress, and responses were averaged across 12 vignettes (Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002). These vignettes were designed to assess fathers and mothers, respectively, with regard to distinct parental response styles.

Children's attachment with father and mother—The Main and Cassidy (1988) Strange Situation procedure, adapted to be appropriate for children in kindergarten, was utilized to assess attachment with father and mother. Both parent-child dyads participated in a separation-reunion task in separate visits spaced about two weeks apart, including a long separation between the parent and child, that is, a 55-minute separation, with reactions examined in a 5-minute reunion. In the separation period, parents and children completed

various other assessments and questionnaires while in different rooms. Leading up to the reunion, the child was observed while interacting with the experimenter and when left alone. Upon reunion, the parent was instructed to respond to the child as they would normally at home in the context of play and were observed for a 5 minute reunion.

The separation-reunion task was coded for attachment behaviour comprising one of four categories (Cassidy & Marvin, 1992; Main & Cassidy, 1988). Extensive training for reliability and proficiency was established in concert with Ellen Moss and colleagues on an adapted version of the Main and Cassidy coding system to ensure the coder's ability to assess attachment in preschool and school age children. Secure (B) children exhibit comfort and pleasure throughout the reunion with the parent as the child initiates positive interactions, proximity and contact with the parent demonstrating the use of the parent to facilitate exploration and play. Insecure-avoidant (A) children maintain or increase emotional and/or physical distance from the parent upon reunion. The child ignores the parent with the excuse or rationale of being otherwise engaged, and this avoidance of intimacy prohibits exploration of the child. Children with insecure-ambivalent/dependent (C) attachments attempt to exaggerate intimacy, dependency and helplessness with the parent. The child may show subtle anger or sadness toward the parent and when seeking proximity show ambivalence (e.g., jerk away). Other children may be classified as disorganized (D), insecure-other (I/O) or insecure-controlling (Dcont) which are all considered forms of disorganization as children exhibit increased dysregulation, but behaviour is not consistent with the avoidant, ambivalent, or controlling classifications (Main & Cassidy, 1988). Children who are insecure-controlling utilize either a brittle strategy in effort to control the parent's attention and behaviour in a reversal of parent child roles through punitive responses (e.g., acting to humiliate or reject the parent), or caregiving responses (e.g., showing protection through excessively bright behaviours' illustrating the parent's inappropriate dependency on the child). Children classified within a disorganized group were additionally assigned an underlying organized classification, either secure, insecure-avoidant or insecure-ambivalent/dependent. Children's attachment was also assessed along continuums of security and avoidance exhibited within the attachment relationship; security as scored from 1.0 to 9.0 in half-point increments from 1.0 (*very insecure*) to 9.0 (*very secure*), while avoidance was assessed from 1.0 to 7.0 with higher scores indicating greater avoidance. A child exhibits avoidance by withdrawing from the parent, maintaining distance from the parent, and avoiding emotional or personal interaction with the parent. Avoidance can be displayed in the context of any attachment pattern and is not constrained to any particular classification.

Plan of analyses

Correlations among continuous variables were included to examine the relationship between parenting and attachment security and avoidance with fathers and mothers. Additional logistic regression models were assessed to predict attachment classifications based on parenting behaviours. Multinomial logit regression models allow one to assess relations between a response variable, which may be comprised of multiple categorical outcomes, and a set of predictor variables, which may be either continuous or categorical (Agresti, 2002). In the current study, unordered multinomial logit regression models tested the probability of children's attachment classifications as predicted by positive parenting for fathers and mothers. Children's attachment classifications were modeled as unordered, as it is assumed that a child classified as insecure-avoidant is not necessarily less insecure than one classified as insecure-ambivalent. First, main effect models predicting attachment classifications with father from father's warmth and responsiveness, respectively, were fit. Then a model including both father's warmth and responsiveness as predictors of attachment classifications was fit, further determining if the additive model including mother's parenting improved

model fit. Chi square difference tests were used to compare models. The same pattern of analyses were used for predicting attachment classifications with mother based on mother's parenting, including a determination if the additive model including father's parenting improved fit.

Results

Attachment distributions

Of the 236 father-child pairs participating in this study, 227 cases were classified with regard to attachment patterns, 3 did not participate in the task, and 6 were excluded due to procedural irregularities. One hundred and twenty-four children (55%) were classified as secure (B), 29 (13%) as avoidant (A), and 43 (19%) cases as ambivalent/dependent (C). Thirty-one children (13%) were classified as disorganized (D/Dcont/IO); their underlying organized classifications were: D/B ($n = 8$), D/A ($n = 6$), and D/C ($n = 17$). Mother-child attachment patterns evidenced similar distributions; 3 of 236 mother-child cases were not coded due to procedural irregularities, 144 (62%) were classified as secure (B), 36 (16%) as avoidant (A), and 31 (13%) cases as ambivalent/dependent (C). Twenty-two children (9%) were classified within a disorganized group (D/Dcont/IO); their underlying organized classifications were: D/B ($n = 4$), D/A ($n = 7$), and D/C ($n = 11$). In the following, secure (B) vs. insecure avoidant (A) vs. insecure-ambivalent/dependent (C) attachments were compared irrespective of disorganization. Thirty-eight percent of children were classified as secure with both mother and father, while 26% were secure with mother and insecure with father, 15% were insecure with mother and secure with father, and 21% of children were insecure with both parents.

Descriptives

Intercorrelations among parental warmth and responsiveness and continuous assessments of attachment for fathers and mothers can be seen in table 1. Dimensions of fathers' and mothers' parenting and attachment were significantly correlated with each other, for example, mothers' and fathers' warmth was correlated ($r = .72, p < .01$). Children's attachment was also correlated among fathers and mothers (security: $r = .29, p < .01$; avoidance: $r = .19, p < .01$). Additionally, parent's warmth and responsiveness were associated for fathers ($r = .12, p < .10$) and for mothers ($r = .32, p < .01$).

Parental Warmth, Responsiveness and Attachment

Correlations indicate that specific positive aspects of fathers' parenting were related to children's attachment with fathers, as seen in table 1. While parental warmth was unrelated to children's attachment security and avoidance, higher levels of fathers' responsiveness were related to less avoidance exhibited within the father-child attachment relationship, scored on a continuum ($r = .17, p < .01$). For mothers, there were marginal relationships between maternal warmth and responsiveness and children's avoidance and security of attachment scored on a continuum. Greater maternal warmth was associated with less avoidance in the attachment relationship ($r = -.12, p < .10$) while greater responsiveness to distress was associated with higher levels of security ($r = .11, p < .10$) suggesting different aspects of parenting are related to different aspects of attachment for mothers.

For father-child attachment, multinomial regression models did not support that the probability of being classified as secure, insecure-avoidant or insecure-ambivalent/dependent differed based on levels of father's warmth. However, father's responsiveness to distress predicted attachment classifications in comparison to the null model ($\chi^2(2) = 10.12, p < .01$). These analyses revealed differences in attachment reflecting that low father responsiveness increased the likelihood of insecure-avoidant attachments in comparison to

secure (95% CI: .25 to .73) or insecure-ambivalent/dependent (95% CI: .28 to .91) attachment classifications. Thus fathers' lack of responsiveness was related to children being classified as insecure-avoidant.

For mother-child attachment, multinomial regression models also did not support maternal warmth as a predictor of attachment classification. At the same time, mother's responsiveness to distress distinguished between children's attachment with mothers in comparison to the null model ($\chi^2(2) = 6.74, p < .05$; see table 2). Analyses supported an increased likelihood of children being classified as insecure-ambivalent/dependent based on mother's responsiveness in comparison to secure (95% CI: .29 to .85) and insecure-avoidant (95% CI: .25 to 1.00) attachments. Thus, mother's lack of responsiveness predicted children being classified as insecure-ambivalent/dependent.

Unique effects of Fathering and Mothering on Attachment

Multinomial logit models further explored the relative effects of fathers' and mothers' parenting in predicting children's attachment classifications. Adding mothers' responsiveness to the model with fathers' responsiveness in predicting attachment with fathers fit well in comparison to a null model ($\chi^2(4) = 10.41, p < .05$; see also table 2), but was significantly worse than the father-only prediction model ($\chi^2(2) = .63, p > .05$). Thus, fathers' responsiveness alone was sufficient in predicting father-child attachment. With regard to predicting attachment with mothers; the addition of father's responsiveness to the model fit well in comparison to the null model ($\chi^2(4) = 8.05, p < .05$) but was significantly worse in comparison to the mother-only model ($\chi^2(2) = .63, p > .05$). Thus, mothers' responsiveness alone was sufficient to the prediction of mother-child attachment.

Discussion

The results support the significance of fathering, specifically, positive aspects of fathering, for multiple aspects of the security of parent-child attachments beyond the preschool years. Specifically, fathers' low responsiveness to children's emotional distress was linked with children's avoidance in attachment with fathers. Low responsiveness also predicted children's attachment insecure-avoidant classification in comparison to other attachment classifications (i.e., secure and insecure-ambivalent). Additionally, children's attachment with father was predicted uniquely by father's parenting; mother's parenting behaviours did not add to the prediction of father child attachment. Analyses also supported relations between positive aspects of mother's parenting and mother-child attachment. Mothers' warmth was related to less avoidance in attachment. Mothers' low responsiveness was associated with lower attachment security, and also children's insecure-ambivalent attachment classification in comparison to other classifications. Children's attachment with mother was predicted uniquely by mother's parenting; father's parenting behaviours did not add to the prediction of mother-child attachment.

The results of the current study also support the notion that different aspects of positive parenting are associated with different child outcomes (Davidov & Grusec, 2006). Compared to parental warmth, parental responsiveness to distress was particularly important in contributing to children's attachment in this age period. Parents' responses to children's displays of negative affect are known to have important implications for children's emotional functioning (Dunsmore & Halberstadt, 1997; Eisenberg, Cumberland & Spinrad, 1998), including attachment formation (Goldberg, Grusec & Jenkins, 1999; McElwain & Booth-LaForce, 2006). The results of this study are consistent with previous work finding links between responsiveness and emotional functioning, while warmth may be more closely linked with social competence and functioning (Bugental, 2000; Davidov & Grusec, 2006). Moreover, a relatively vast literature in the infancy period has supported relations between

mother's responsiveness and attachment security (DeWolff & van IJzendoorn, 1997). Thus, the findings contribute to the understanding of the development of these attachment processes with mothers and fathers beyond infancy adding further support for differential effects of warmth and responsiveness on children's adjustment.

Importantly, the current findings support that fathers' parenting behaviours predict children's attachment with fathers above and beyond the impact of mothering. This finding is important, particularly given weak or absent associations found between fathering and attachment (Braungart-Rieker, Garwood, Powers & Wang, 2001; Van IJzendoorn & De Wolff, 1997) and notions of shared parenting behaviours contributing to high concordance in children's attachment with mothers and fathers (Fox, Kimmerly & Schafer, 1991). Interestingly, less supportive responses were specifically linked with insecure-avoidant attachments to fathers, but this pattern differed for mothers. The association between avoidance and low sensitivity in the father child relationship is notable given previous research findings suggesting that fathers' do tend to withdraw from family relationships in times of stress; for example, research has cited the withdrawal of men in the marital relationship when distressed (e.g., Cummings, Goeke-Morey, and Raymond, 2004). Future research should examine this potential withdrawal response in the father-child parenting relationship in relation to broader patterns of withdrawal by fathers in other family contexts (e.g., the marital relationship) and the origins and implication of this style of paternal behaviour for children's development, even beyond the attachment relationship.

While father's responsiveness was consistently associated with lowered levels of child avoidance, pathways between mothering and attachment were more complex. Mother's warmth was (marginally) related to less avoidance in attachment, while responsiveness was linked with security and the specific prediction of insecure-ambivalent/dependent classifications. These findings suggest that positive parenting by mothers, that is, warmth and responsiveness, may contribute to different aspects of the attachment relationship than for fathers.

The relationship between lower maternal warmth and greater levels of child avoidance may be due to maternal suppression of positive affect. Davidov and Grusec (2006) found maternal warmth to be associated with positive affect regulation. In addition, avoidance in attachment develops in the context of parent's minimization of affective expressions, including that of positive affect (Matas, Arrend & Sroufe, 1978; Sroufe, 1996). The associations between responsiveness and ambivalence are also consistent with Davidov & Grusec's (2006) findings, which suggested that responsiveness to distress better predicted negative affect regulation. These findings linking different mothering behaviours and aspects of attachment are not incongruent. Rather the use of both continuous and categorical attachment variables contributes to our understanding of the complex pathways in which parenting affects attachment. Children exhibit differing amounts of avoidance within their pattern of attachment, for instance, within the insecure-ambivalent classification, which was also linked to mothering in the current study. Thus, continuous assessments of avoidance may help us to understand the impact of mothering on variations among the insecure-ambivalent pattern, as well as other patterns, further elucidating our understanding of mothering and attachment. It will be important for future research to investigate these differing contributions of mothering to separate aspects of attachment.

While this study has many strengths, including the implementation of multiple methods and informants, it also has limitations. Findings are most appropriately generalized to similarly well-functioning community samples and must be interpreted with caution as the relationships are cross-sectional and included relatively weak associations. Specifically, bidirectional effects merit consideration in future research due to the cross-sectional

analyses in the current study, for example, it may be that insecure-avoidant children elicit less positive interactions from their fathers, rather than fathers' lack of positive responding fostering avoidant attachment. From a family systems perspective, these processes are probably cyclical and interactive. Further examination of these processes longitudinally is warranted to support directionality in future studies.

Nonetheless, the current study is important in contributing to understanding the impact of parenting and family processes in relation to children's attachment relationships in early middle childhood, an understudied age (Moss, Cyr & Dubois-Comtois, 2004; Moss, Rousseau, Parent, St-Laurent & Saintonge, 1998; Moss, Smolla, Cyr, Dubois-Comtois, Mazzarello & Berthiaume, 2006). Notably, the study also contributes to the growing literature on the importance of father-child relationships, suggesting unique effects of fathering on children's attachment (Lamb & Tamis-Lamonda, 2004) and potentially suggesting different pathways in which parental responsiveness to distress impacts attachment. Finally, the study strengthens previous findings with regard to differences in positive parenting effects on child functioning and adjustment (Davidov & Grusec, 2006), suggesting that maternal and paternal warmth and responsiveness may contribute differently to children's social and emotional functioning.

In sum, these findings underscore the importance of both fathers' as well as mothers' positive parenting in affecting children's attachment relationships, extending the evidence of the importance of links between positive parenting and attachment to kindergarten-aged children. Moreover, these findings have implications for developing process models for relations between parenting and child attachment to fathers as well as mothers in this age period. Future studies are needed to further delineate how and why these processes differ for fathers in comparison to mothers in the context of the family system to understand fathers' unique effects on child adjustment. The findings also support further study of how different processes for mothers and fathers may contribute to different elements of children's attachment with parents.

Acknowledgments

This research supported by a grant from the NIMH (R01 MH57318) awarded to Patrick Davies and E. Mark Cummings

References

- Agresti, Alan. Categorical Data Analysis. N.J. John Wiley & Sons; Hoboken: 2002.
- Bar-Haim Y, Sutton B, Fox N, Marvin R. Stability and change of attachment at 14, 24, and 58 months of age: Behavior, representation, and life events. *Journal of Child Psychology and Psychiatry and Allied Disciplines* 2000;41:381–388.
- Barnett MA, Deng M, Mills-Koonce WR, Willoughby M, Cox M. Interdependence of parenting of mothers and fathers of infants. *Journal of Family Psychology* 2008;22:561–573. [PubMed: 18729670]
- Braungart-Rieker JM, Garwood MM, Powers BP, Wang X. Parental sensitivity, infant affect, and affect regulation: Predictors of later attachment. *Child Development* 2001;72:252–270. [PubMed: 11280483]
- Belsky J. Parent, infant, and social-contextual antecedents of father-son attachment security. *Developmental Psychology* 1996;32:905–913.
- Belsky J, Campbell S, Cohn J, Moore G. Instability of infant-parent attachment security. *Developmental Psychology* 1996;32
- Bornstein MH, Tamis-LeMonda CS, Hahn C, S. Haynes OM. Maternal responsiveness to young children at three ages: Longitudinal analysis of a multidimensional, modular, and specific parenting construct. *Developmental Psychology* 2008;44:867–874. [PubMed: 18473650]

- Carmen R, Pedersen FA, Huffman LC, Bryan YE. Dyadic distress management predicts subsequent security of attachment. *Infant Behavior and Development* 1993;16:131–147.
- Cassidy, J.; Marvin, RS.; The MacArthur Working Group on Attachment. Attachment organization in three- and four-year olds: Procedures and coding manual. University of Virginia; 1992. Unpublished manuscript
- Cummings, EM.; Goeke-Morey, MC.; Raymond, J. Fathers in Family Context: Effects of Marital Quality and Marital Conflict. In: Lamb, ME., editor. *The role of the father in child development* (3rd ed.). x ed.. John Wiley and Sons Inc.; Hoboken, NJ, US: 1997.
- Davidov M, Grusec JE. Untangling the links of parental responsiveness to distress and warmth to child outcomes. *Child development* 2006;77:44–58. [PubMed: 16460524]
- De Wolff M, van IJzendoorn MH. Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development* 1997;68:571–591. [PubMed: 9306636]
- Dunsmore, JC.; Halberstadt, AG. How does family emotional expressiveness affect children's schemas?. In: Barrett, KC., editor. *The communication of emotion: Current research from diverse perspectives*. Jossey-Bass; San Francisco: 1997. p. 45-68.
- Egeland B, Farber E. Infant-mother attachment: Factors related to its development and changes over time. *Child Development* 1984;55:753–771. [PubMed: 6734316]
- Eisenberg N, Cumberland A, Spinrad TL. Parental socialization of emotion. *Psychological Inquiry* 1998;9:241–273. [PubMed: 16865170]
- Fagot BL, Kavanagh K. Parenting during the second year: Effects of children's age, sex, and attachment classification. *Child Development* 1993;64:258–271. [PubMed: 8436033]
- Fox NA, Kimmerly NL, Schafer WD. Attachment to Mother/Attachment to Father: A Meta-Analysis. *Child Development* 1991;62:210–225. [PubMed: 1827064]
- Frodi A, Grolnick W, Bridges L. Maternal correlates of stability and change in infant-mother attachment. *Infant Mental Health Journal* 1985;6:60–67.
- Goeke-Morey MC, Cummings EM. Impact of father involvement: A closer look at indirect effects models involving marriage and child adjustment. *Applied Developmental Science* 2007;11(4):1–5.
- Goldberg S, Grusec JE, Jenkins JM. Confidence in protection: Arguments for a narrow definition of attachment. *Journal of Family Psychology* 1999;14:475–483.
- Goossens FA, Van IJzendoorn MH. Quality of infants' attachments to professional caregivers: Relations to infant-parent attachment and day care characteristics. *Child Development* 1990;61:832–837. [PubMed: 2364757]
- Grossmann, K.; Grossmann, KE.; Kindler, H.; Zimmermann, P. A wider view of attachment and exploration: The influence of mothers and fathers on the development of psychological security from infancy to young adulthood. In: Cassidy, J.; Shaver, PR., editors. *Handbook of attachment: Theory, research, and clinical applications*. 2nd. Ed.. Guilford Press; New York: 2008. p. 880-905.
- Grossman K, Grossman KE, Fremmer-Bombik E, Kindler H, Scheuerer-Engelsch H, Zimmermann P. The Uniqueness of the Child–Father Attachment Relationship: Fathers' Sensitive and Challenging Play as a Pivotal Variable in a 16-year Longitudinal Study. *Social Development* 11:301–337.
- Grusec JE, Goodnow JJ, Kuczynski L. New directions in analyses of parenting contributions to children's acquisition of values. *Child Development* 2000;71:205–211. [PubMed: 10836575]
- Kaczynski KJ, Lindahl KM, Malik NM, Laurenceau JP. Marital conflict, maternal and paternal parenting, and child adjustment: A test of mediation and moderation. *Journal of Family Psychology* 2006;20(2):199–208. [PubMed: 16756395]
- Lamb, M.; Tamis-Lamonda, CS. The role of the father: An introduction. In: Lamb, M., editor. *The role of the father in child development*. 4th ed.. John Wiley & Sons; Hoboken, NJ: 2004.
- Lewis C, Lamb ME. Father's influences on children's development: The evidence from two-parent families. *European Journal of Psychology of Education* 2003;18:211–228.
- Main M, Cassidy J. Categories of response to reunion with the parent at age 6: Predictable from infant attachment classifications and stable over a 1-month period. *Developmental psychology* 1988;24:415–426.
- Matas L, Arend R, Sroufe L. Continuity of adaptation in the second year: The relationship between quality of attachment and later competence. *Child Development* 1978;49:547–556.

- McElwain NL, Booth-LaForce C. Maternal sensitivity to infant distress and nondistress as predictors of infant-mother attachment security. *Journal of Family Psychology* 2006;20:247–255. [PubMed: 16756400]
- Moss E, Cyr C, Bureau JF, Tarabulsky GM, Dubois Comtois K. Stability of attachment during the preschool period. *Developmental psychology* 2005;41:773–783. [PubMed: 16173874]
- Moss E, Cyr C, Dubois Comtois K. Attachment at early school age and developmental risk: Examining family contexts and behavior problems of controlling-caregiving, controlling-punitive, and behaviorally disorganized children. *Developmental psychology* 2004;40:519–532. [PubMed: 15238040]
- Moss E, Rousseau D, Parent S, St-laurent D, Saintonge J. Correlates of attachment at school age: Maternal reported stress, mother-child interaction and behavior problems. *Child Development* 1998;69:1390–1405. [PubMed: 9839423]
- Moss E, Smolla N, Cyr C, Dubois Comtois K, Mazzarello T, Berthiaume C. Attachment and behavior problems in middle childhood as reported by adult and child informants. *Development and psychopathology* 2006;18:425–444. [PubMed: 16600062]
- Owen MT, Cox MJ. Marital conflict and the development of infant-parent attachment relationships. *Journal of Family Psychology* 1997;11:152–164.
- Newland L, Coyl DD, Freeman H. Predicting preschoolers' attachment security from fathers' involvement internal working models, and use of social support. *Early Child Development and Care* 2008;178:785–801.
- Parke, RD.; Dennis, J.; Flyr, ML.; Morris, KL.; Killian, C.; McDowell, DJ.; Wild, M. Fathering and Children's Peer Relationships. In: Lamb, ME., editor. *The role of the father in child development*. 4th ed.. John Wiley and Sons Inc.; Hoboken, NJ, US: 2004.
- Rohner, RP.; Saavedra, JM.; Granum, EO. Handbook for the study of parental acceptance and rejection. University of Connecticut, Center for the study of parental acceptance and rejection; Storrs, CT: 1991. Chapter 4- Parental Acceptance-Rejection Questionnaire: Test Manual; p. 17-48.
- Sroufe, LA. Cambridge studies in social & emotional development. Cambridge University Press; New York, NY, US: 1996. Emotional development: The organization of emotional life in the early years.
- Suess GJ, Grossman KE, Sroufe LA. Effects of infant-attachment to mother and father on quality of adaptation in preschool: From dyadic to individual organization of self. *International Journal of Behavioural Development* 1992;15:43–65.
- Van IJzendoorn MH, DeWolff MS. In search of the absent father- meta-analyses of infant-father attachment: A rejoinder to our discussants. *Child Development* 1997;68:604–609. [PubMed: 9306640]
- Waters J. The reliability and stability of individual differences in infant-mother attachment. *Child Development* 1978;49:483–494.

Table 1

Intercorrelations among study variables for fathers and mothers parenting and child attachment.

	Mean(SD)	1	2	3	4	5	6	7
1. Warmth (F)	61.93(5.25)							
2. Warmth (M)	65.13(6.22)	.72**						
3. Responsiveness (F)	2.83(.71)	.12 ^t	.09					
4. Responsiveness (M)	2.58(.62)	.18**	.32**	.35**				
5. Child Security (F)	4.87(2.29)	.01	.06	.09	.07			
6. Child Security (M)	5.41(2.32)	.04	.02	.09	.11 ^t	.29**		
7. Child Avoidance (F)	2.48(1.11)	-.08	-.02	-.17*	-.06	-.55**	-.16*	
8. Child Avoidance (M)	2.51(1.34)	-.08	-.11 ^t	-.02	-.02	-.19**	-.67**	.19*

F= Fathers; M= Mothers

**
p<.01;

*
p<.05;

^t
p<.10

Table 2

Statistics for the additive effects models of parental responsiveness and child attachment.

Father Attachment		Avoidant vs. Secure		Avoidant vs. Ambivalent	
	Likelihood	χ^2	df	β (se)	β (se)
Intercept					
Responsiveness(F)	409.94*	7.39	2	-.78(.29)*	-.61(.32) ^f
Responsiveness(M)	403.19	.63	2	-.23(.33)	-.28(.37)
Mother Attachment		Ambivalent vs. Secure		Ambivalent vs. Avoidant	
	Likelihood	χ^2	df	β (se)	β (se)
Intercept					
Responsiveness(M)	407.59*	5.24	2	-.67(.30)*	-.62(.30) ^f
Responsiveness(F)	402.98	.63	2	-.21(.26)	-.19(.33)

F= Fathers; M= Mothers

*
p < .05;

^f
p < .10