The developmental origins and the longitudinal consequences of the infant-father attachment bond have been studied a number of times, but for the child-father attachment relationship, different developmental factors seem to play a role. It has been suggested that the importance of the child-father relationship may lie in the domain of coping with environmental challenges rather than in the attachment domain. This study tested this hypothesis longitudinally. Within a longitudinal study of 47 families, a number of data sets were tested for antecedent and longitudinal relations to infant-father attachment patterns as compared to father's sensitivity in challenging the toddler in an interactive play situation. Only very few significant longitudinal findings emerged for infant-father attachment qualities. But a father-child play situation at 24 months proved to be a pivotal situation. A large number of antecedent and longitudinal relations emerged between attachment variables and paternal sensitivity in challenging his toddler during play. Results showed that fathers influence their child's security by their sensitivity in challenging the toddler. Thus, there was evidence for a different central assessment situation for the father-child relationship than the mother-child relationship when later assessments of the child's security or inner working model of self are concerned. (Contains 16 references.) (Author/EV)
INFANT-FATHER ATTACHMENT RELATIONSHIP:
SENSITIVE CHALLENGES DURING PLAY WITH
TODDLER IS THE PIVOTAL FEATURE

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With special thanks to Dr. Elisabeth Fremmer-Bombik for advising students to assess paternal challenging sensitivity

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Abstract

The developmental origins and the longitudinal consequences of the infant-father attachment bond have been studied a number of times but for the child-father attachment relationship, different developmental factors seem to play a role. It has been suggested that the importance of the child-father relationship may lie in the domain of coping with environmental challenges rather than in the attachment domain. We tested this hypothesis longitudinally.

Within one of our longitudinal studies of 47 families, a number of data sets were tested for antecedent and longitudinal relations to infant-father attachment patterns as compared to father's sensitivity in challenging the toddler in an interactive play situation. Only very few significant longitudinal findings emerged for infant-father attachment qualities. But a father-child play situation at 24 months proved to be a pivot situation. A large number of antecedent and longitudinal relations emerged between attachment variables and paternal sensitivity in challenging his toddler during play.

Father's presence at birth (1976/77), paternal empathy, and his involvement in infant care during the first year were significantly related to father's sensitivity in playful challenges, but not to infant father attachment quality. With cognitive variables controlled for, fathers of securely attached infants showed higher sensitivity in their playful challenges at 24 months than fathers of insecurely attached infants.

Prospectively, paternal sensitivity in challenging his toddler proved to be highly stable from 24 months to 6 years. Father's attachment representation was more closely related to paternal sensitivity in challenging his toddler than to infant-father attachment quality. At age 10, paternal sensitivity in challenging his toddler but not infant-father attachment quality was predictive of a secure coping strategy. At age 16, the adolescent's security score as assessed in the Adult Attachment Interview was positively related to paternal sensitivity in challenging his toddler but not to infant-father attachment quality. The scores on the dimension dismissiveness were negatively related to paternal sensitivity in challenging his toddler.

Thus, we found evidence for a different central assessment situation for the father-child relationship as compared to the mother-child relationship when later assessments of the child's security or inner working model self and others are concerned.

We conclude that fathers influence the child's security by their sensitivity in challenging the toddler.

Theoretical and Empirical Background

Researchers have often speculated about the apparently different paternal role for the child's development as compared to maternal role concerning the child's attachment needs and influencing the child's approach to life's challenges (see Parke, 1995). In two-parent families, almost all infants develop an attachment to their father despite the fact that a) he is normally much less involved in infant caretaking, that b) the infant is separated from him during most of the day and often longer, and that c) most infants experience their fathers much more often in rough-and-tumble games instead of during tender loving care. Folk wisdom and poets have pictured the father as someone who leads the child towards external challenges, and a good father provides support and serves as a secure base for his explorative child. There is no doubt that fathers are attachment figures and as such, are proposed to influence the child's personality and sense of security.

The special characteristic of fathers as attachment figures was reflected already by Bowlby (Bowlby, 1969/82, p. 378): "A young child's experience of an encouraging, supportive, and cooperative mother, and a little later father, gives him a sense of worth, a belief in the helpfulness of others, and a favorable model on which to build future relationships." Thus, both parents contribute to the child's later security, each parent in her/his own specific way.

During our longitudinal study of children in their families, we have always attempted to include assessments of fathers and child-father interactions as systematically as possible. This study was started in 1976/77 in Northern Germany and most of the families were quite traditional in their division of labor, with mothers being responsible for home and children and fathers being the sole breadwinners of the family. The traditional attitude of the fathers made it difficult at times to secure their cooperation during the study.

The available longitudinal data sets allowed for the following testable hypothesis:
The infant-father attachment quality as assessed under conditions of separation stress in the strange situation is not as central for the child’s development of security later on as the father’s sensitivity in challenging his toddler during play.

**Sample**

At the onset of the Bielefeld Longitudinal Study (1976/77), 49 families participated. At the birth of the child, all parents were married to each other. The families were generally middle class, and all parents had finished high school (Grossmann, Grossmann, Spangler, Unzner & Suess, 1985). All infants were born healthy, half being girls, half being first borns (see also Grossmann & Grossmann, 1991). Of the families observed at birth, 49 agreed to home visits during the first year, but 2 families were lost during the second year due to divorce and complete separation of the father from mother and child.

**Assessments and Methods**

**Father variables**

**Father’s presence at birth of the child**

The opportunity for fathers to be present at birth was in 1976/77 not yet introduced into the hospital routine, but upon insistence of the couple, the father was allowed to be present. Half of the fathers were present.

**Paternal empathy**

The families were visited at home when the infants were 2, 6, and 10 months old. All interactions with the infant were observed using Ainsworth’s narrative report protocols. If the father interacted with the infant, the quality of his interactions was also rated. Almost 80% of the fathers were present during at least one home visit, many were present more than once. In all except one family, the mother was the primary caretaker. Fathers interacted mostly with the infant when the baby was in a pleasant mood because distress episodes were almost always handled by the mother. Thus, the interactive quality between fathers and their infants was labelled paternal empathy and not paternal caregiving sensitivity. Paternal empathy scores were available for 32 fathers (Wutz, 1985). Paternal presence during birth was significantly related to the number of home visits in which he was participating but not to paternal empathy (Grossmann & Grossmann, 1991).

**Father’s involvement in infant care during the first year**

At each home visit, the mothers were interviewed about a variety of issues including paternal involvement in infant care. All mothers accepted their own primary responsibility but reported proudly on any task or care the father was involved in. Data on paternal involvement during the first year were available for every father.

**Fathers’ sensitivity in challenging his toddler during play at 24 months**

During a lengthy home visit around the toddler’s 2nd birthday, the fathers were given a new play material (play dough) for the toddler and asked to play jointly for 10 minutes. 47 fathers participated. The sessions were videotaped. A scale was constructed to combine 1. the essential features of sensitivity sensu Ainsworth while defining "appropriateness" in a maturity enhancing way. Together with 2. the quality of father’s challenges during play fostering the child’s exploration. The scale was defined to assess the following phenomenon: When the child’s attention is about to shift from exploration (a goal worth pursuing or trying out new ways of coping) to attachment behaviors, the father -through is reassuring presence or with supporting, comforting words - manages to keep the child’s attention on the goal or on her activities, thus alleviating wariness or insecurity while exploring. This behavior usually results in "security of exploration", i.e. Continued exploration in the face of some frustrations. The scale rates the following paternal behaviors: challenging the toddler’s interest and cooperation towards new skills and goals while being sensitive to the toddler’s signals and communications; his readiness to cooperate with the toddler while enticing the child to play in more mature ways; his genuine interest in the child’s contributions which he signifies as competent; individually appropriate praise that makes the child enjoy their play; teaching skills in tune with the toddler’s abilities; setting manageable goals for the toddler, and demanding as well as sensitively supporting standards appropriate for his child in play and in general conduct (Kassubek, 1995). The scale was termed “father’s sensitivity in challenging his toddler during play”. The scale ranged from 1, indicating an absence of sensitive challenges, to 9, indicating highly sensitive challenges. The mean score for all fathers was 5.6.

**Fathers’ sensitivity in challenging his child at 6 years**
Shortly after the children's 6th birthday, the families were seen again at home. Among other family interaction sessions, the fathers were given 6 pictures of constructions for wooden blocks. 42 fathers cooperated. The task was to guide the child verbally towards constructing such a building while the child was not supposed to see the picture. The definition of fathers' sensitivity in challenging his child was similar as for the 2-year-olds, adjusted for the expanded and more mature behaviors of the six-year-olds. Not all fathers refrained from hands-on involvement or letting the child glance at the picture. Father's sensitivity of his challenges was rated from 1 to 9. The mean score was 4.8 (Ekhardt, 1995).

**Father's attachment representation**
When the children were 6 years old, a separate appointment was made with the father to conduct the Adult Attachment Interview (George, Kaplan, & Main, 1985). 44 fathers participated. The AAI was classified into secure versus insecure attachment representation according to the method of Fremmer-Bombik (Grossmann, Fremmer-Bombik, Rudolph, & Grossmann, 1988). 25 fathers were classified 'valuing relationships' (secure) and 19 as 'devaluing relationships' (insecure).

**Child attachment variables**

**Infant-father attachment quality**
When the infants were 18 months old, 47 fathers participated in the strange situation assessment, but one session was inadvertently not recorded. 19 infant-father attachments were classified secure, 25 avoidant, 1 ambivalent and 1 could not be assigned to any class (Grossmann, Grossmann, Huber, & Wartner, 1981).

**Child's security in dealing with negative emotions at age 10**
During a home visit to the 10-year-old children, the children were given a lengthy interview about their daily lives, their view of their parents, and their ways of dealing with problematic challenges, disappointments and negative feelings such as feeling sad, afraid, angry, rejected, or lonely. The children's reports were classified into a secure strategy (letting the parents or other trusted persons know about it and accepting help, n = 13), an insecure strategy (seeking solitude or extended activity until the negative feelings were over, n = 20), and a mixed strategy (n = 9) (Scheuerer-Englisch, 1989).

**Child's security in dealing with problems at age 10**
The interviews with the 10-year-olds were also analysed for the child's way of dealing with specific problems such as school exams, quarrels with parents, injuries and doctor's appointments, misdeeds a.s.o. Again, the children's coping strategies were classified as secure (relationship oriented, n = 9), insecure (not relationship oriented, n = 21), or mixed (n = 12). The distribution of the categories reflects the increasing attempts of 10-year-olds to cope with most of their everyday problems by themselves.

**Security versus dismissiveness at age 16**
When the children were 16 years old, 44 of them agreed to take the Adult Attachment Interview among other assessments. The AAI was coded and classified with the Attachment Q-sort (Kobak, 1993). The method results in a continuous score for the dimensions secure, dismissing, preoccupied, and deactivation vs. hyperactivation (Zimmermann, 1994, Zimmermann & Grossmann, 1996).

**Cognitive variables**
At 24 months, the children's Mental Developmental Index (MDI) was assessed with the Bayley Scales of Infant Development. The scores ranged from 80 to 150, with a group mean of 110. The standard deviation was 17.3.

Most fathers (n=26) had finished basic education (Hauptschule). Five had obtained the highest high school degree (Abitur). Only two had a university degree at the time of the child's second birthday.

The socio-economic standing of the families was 1/3 upper middle class, 1/3 middle middle class, 1/3 lower middle class, and only 2 families were rated lower class.

**Influence of cognitive variables**
Paternal sensitivity in challenging his toddler was positively and highly significantly related to SES (r = .44, p<.001), to toddler's MDI (r = .44, p<.001), and to father's education (r = .29, p=.027).
Paternal education, SES and/or toddler's MDI were significantly related to most of the above listed variables. Therefore all relations reported here were tested for their associations with these three cognitive variables. All reported results emerged as well when cognitive variables were partialled out.

Results

Paternal indices of interest in his infant during the first year were significantly related to paternal sensitivity in playful challenges but not to quality of infant-father attachment (Table 1). In 1976/77, more fathers with higher education (Abitur) were present at birth (4 out of 6). For those 4 fathers, the mean of their paternal sensitivity in challenging their toddler was 7.0 as compared to the mean score of 4.0 for the 2 fathers not present at birth. Exactly half (20) of the fathers with less education (middle school and main school) were present at birth. As compared to the 20 fathers with comparable education but not present at birth, their mean sensitivity in challenging score was 5.2 as compared to 4.2 (p<.02).

Paternal empathy, i.e. the observed quality of father's sensitive and appropriate interactions with his infant during the first year excluding infant distress episodes, was marginally significantly associated with paternal sensitivity in challenging his toddler. It was not related to infant-father attachment quality (Table 1).

Paternal involvement as reported by the mother was systematically associated with paternal sensitivity in challenging his toddler but not to infant-father attachment quality. At the time of these childrens’ infancy years, mothers did not expect substantial help from fathers, but were happy with any kind of involvement from his side. Thus, fathers were free to choose how much time they wanted to spend with their infant and what chores to do.

The results suggest that fathers who chose to spend more time with the infant or who were more sensitive in their interactions with their baby, given that mother was present, were still more sensitive in their challenging play interactions with their toddlers at 24 months. Neither paternal empathy nor involvement during the first year of the infant’s life were related to any of the cognitive variables.

Security of infant-father attachment was tendencially related to paternal sensitivity in challenging his toddler six months later (p<.09) (Figure 1). Infant attachment behavior after separation stress and paternal sensitivity in challenging the toddler during play as evidenced by high cooperativeness between the toddler and father seem to measure different aspects of the father-child attachment relationship. Their association became significant for the 27 father-toddler pairs (p<.02) belonging to middle class and above. Similarly, differences between fathers’ sensitivity in challenging his toddler in secure vs. non-secure attachment relationships were approaching significance (p<.08) if the toddlers had an MDI above the mean (MDI = 110). Thus, father’s sensitivity in challenging was associated with the quality of infant-father attachment only within middle to upper middle class and for cognitively more competent toddlers.

Fathers with a secure attachment representation had been significantly more sensitive in challenging their toddler during play (Figure 2). When father’s education was entered, the association between father’s attachment representation and paternal sensitivity was no longer significant for fathers with less education (unfinished education or basic schooling).

Table 2 shows the predictive validity of paternal sensitivity in challenging his toddler. If the 10-year old reported that she/he would communicate her/his negative feelings to a parent or some other trusted person (often a grandparent) (relationship oriented or secure coping strategy with feelings of sadness, anger or fear) then this child had most likely experienced a father who was sensitively challenging, guiding and supporting her/his play at 2 years. Paternal sensitivity in challenging his child at 6 years, however, was not associated with the child’s security at 10 years.
Table 1: Antecedents and Stability of Paternal Sensitivity in Challenging their 2-year-old Toddlers as Compared to Infant-Father Attachment Quality at 18 Months (Levels of Relational Significance*)

<table>
<thead>
<tr>
<th>Antecedent Variables</th>
<th>Paternal Sensitivity in Challenging His Toddler</th>
<th>Secure vs insecure Infant-Father Attachment Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence at birth 1976/77 yes: 24, no: 23</td>
<td>p = .02</td>
<td>(p = .37)</td>
</tr>
<tr>
<td>Paternal Empathy (observed) During First Year (n = 33)</td>
<td>p = .08</td>
<td>(p = .38)</td>
</tr>
<tr>
<td>Paternal Involvement During First Year (n = 47) <em>(maternal report)</em></td>
<td>p = .09</td>
<td>(p = .94)</td>
</tr>
<tr>
<td>Stability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paternal Sensitivity in Challenging his Child at 6 Years (n = 42)</td>
<td>r = .569</td>
<td>(p = .30)</td>
</tr>
</tbody>
</table>

* According to the level of the data, various statistical tests were used, from Chi-Square Test to Mann-Whitney-U-Test

The child’s security in dealing with negative emotions at age ten was also systematically related to her/his MDI and significantly related to paternal education. When one, both or all cognitive variables were partialled out, the relation between child’s security at age ten and paternal sensitivity in challenging his toddler remained significant (p<.051).

At age 16, representational security as assessed by the AAI was highly related to paternal sensitivity in challenging his toddler but not to infant-father attachment quality (Table 2). Security at age 16 was also significantly associated with the child’s MDI. Closer inspection revealed that paternal sensitivity in challenging his toddler was significantly related to adolescent security only for children with an MDI below the group median of 111. This result suggests that children with lower cognitive abilities early on are influenced more by their fathers’ sensitivity in challenging than children with higher cognitive abilities during their toddlerhood.

Dismissiveness in the AAI at age 16 was significantly negatively related to paternal sensitivity in challenging his toddler, but also to all three cognitive variables. Still, the negative relation to paternal sensitivity remained significant, when one, two or all three cognitive variables were accounted for.

Q-sort analysis of the AAI also yields the dimensions preoccupation with attachment issues and deactivation vs. hyperactivation of attachment ideas. The dimensional scores of preoccupation were unrelated to infant-father attachment quality and unrelated to paternal sensitivity in challenging his toddler. In agreement with many other studies on the attachment dimensions, our findings regarding the dimension deactivation vs. hyperactivation were much the same as for the dimension dismissing. Thus, we have not listed the findings for the dimension of deactivation vs. hyperactivation here.
Comparison to maternal sensitivity in challenging her toddler and infant-mother attachment quality
The same set of child-attachment variables were also tested for their association with infant-mother
attachment quality at 12 months and maternal sensitivity in challenging her toddler at 24 months in a play
situation very similar to the toddler-father play situation. The significant longitudinal relations to infant-mother
attachment quality have been published (Grossmann & Grossmann, 1981). We found no significant
associations between the various attachment variables and maternal sensitivity in challenging her toddler.

Table 2: Prospective Longitudinal Correlates of Paternal Sensitivity in Challenging
His 24 Months Old Toddler as Compared to Infant-Father Attachment Quality at 18
Months (Levels of Relational Significance*)

<table>
<thead>
<tr>
<th>Prospective Longitudinal Variables</th>
<th>Paternal Sensitivity in Challenging</th>
<th>Secure vs insecure Infant-Father Attachment Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father’s Attachment Representation (6 Years)</td>
<td>p = .045</td>
<td>(p = .069)</td>
</tr>
<tr>
<td>(secure: 25; insecure: 19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child’s Security in Dealing with Negative Emotions at 10 Years</td>
<td>p = .010</td>
<td>(p = .772)</td>
</tr>
<tr>
<td>Child’s Security in Dealing with Everyday Problems at 10 Years (n = 42)</td>
<td>(p = .117)</td>
<td>(p = .815)</td>
</tr>
<tr>
<td>Security at 16 Years</td>
<td>p = .007</td>
<td>(p = .665)</td>
</tr>
<tr>
<td>AAI Dimension (n = 44)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dismissiveness at 16 Years (negative relation)</td>
<td>p = .003</td>
<td>(p = .837)</td>
</tr>
<tr>
<td>AAI Dimension</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* According to the level of the data, various statistical tests were used, from Chi-Square Test to Mann-
Whitney-U-Test
Discussion

Paternal sensitivity in challenging his 24 month old toddler during a play session - but not infant-father attachment quality at 18 months - proved to be the pivot variable for a) significant relations to antecedent paternal variables indicative of his positive emotional and time investment in his infant during the first year, b) father's attachment representation assessed when the child was 6 years old, and c) subsequent indices of child security at ages 10 and 16.

Paternal sensitivity in challenging his child was found to be highly stable over four years from 2 to 6 years. It was also associated with cognitive competence of father and child, which was accounted for in the reported findings.

Paternal sensitivity in challenging his toddler was markedly, though not quite significantly, associated with quality of infant-father attachment. It was significantly associated with father's attachment representation, but only for fathers with more than basic education. Paternal sensitivity in challenging his toddler during play seems to measure an aspect of the child-father attachment relationship that is not captured by the strange situation assessment.

We interpret our findings for the implications they may have for a more differentiated concept of attachment beyond the infancy years: Quality of attachment has always been defined as an age appropriate balance between attachment and exploratory behaviors. With increasing age, attachment behaviors become less often activated during everyday interactions, but challenges to the exploratory behavioral system become very frequent events for the mobile toddler. We have conceptualized a well-balanced behavioral organization of self-confident, positive and concentrated approaches to environmental challenge as security of exploration versus insecurity of exploration (Grossmann, Grossmann, & Zimmermann, in prep.).

Our data on longitudinal sequelae of the child-father attachment relationship suggest the following implications. The role of the father as a more or less sensitive challenger of the toddler during exploration is very influential at an age, when the organization of exploration becomes important for the child. This special father's sensitivity influences the child's security of coping at age 10 years and the young adolescent's security of her/his attachment representation, especially when the child's early cognitive capacity was not high. Paternal sensitivity in challenging his toddler could not be assessed with the strange situation paradigm but only in a toddler-father play situation.

Further findings on validations, specifications and longitudinal correlates of paternal sensitivity in challenging his toddler within the same sample is presented in the poster of Heinz Kindler (1997) at this conference.
References


Paternal Sensitivity in Challenging His Toddler at 24 months

**Figure 1:** Fathers' Sensitivity in Challenging His Toddler at 24 Months as Related to Infant-Father Attachment Pattern at 18 Months

**Figure 2:** Fathers' Challenging Sensitivity with Their Toddlers at 24 Months as Related to Fathers' Attachment Representations
Title: Infant-father attachment relationship

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