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## ABSTRACT

The findings of differential maternal treatment of siblings in current research are often confounded by the fact that at the time of assessment the two siblings were of different ages. This prospective study examined concordance of siblings' attachment quality to their shared mother. Participating were 106 families and their 12 to 15 month olds. The target toddlers were assessed in the strange situation with mothers and were classified for attachment pattern. Subsequently, 40 younger siblings were born and 36 were assessed in the same strange situation with their mothers when they were 12 to 18 month-olds. Nineteen siblings were less than 3 years apart and 17 were more than 3 years apart. Thirty-four mothers completed the Toddler Temperament Scale at the time of attachment assessment for both children. Temperament ratings were grouped into three types: easy, intermediate, and difficult. The study found the following distribution of attachment patterns for the whole sample: 48 percent secure, 19 percent insecure-avoidant, 11 percent insecure-ambivalent, and 22 percent disorganized. Although the secure pattern was observed much more frequently among the younger than the older siblings (75 percent versus 42 percent), the distribution of the four groups of attachment classes of the younger siblings was not significantly different. No significant concordance was found for attachment pattern of the siblings. Distribution of temperament types for the whole sample was 18 percent easy, 54 percent intermediate, and 24 percent difficult. No significant concordance was found between the three temperament classes. Attachment patterns were not systematically related to types of temperament. (KB)

Poster presented at the Biennial Meeting of the Society for Research in Child Development, Albuquerque, New Mexico, April, 1999

# Siblings' Attachment Qualities to Their Shared Mother and Their Mothers' Rating of Their Temperament: A Prospective Study

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In recent years there has been an increase in research on siblings (Boer & Dunn, 1992). One of the issues is differential parental treatment of the siblings and its effect on the child's personality. Evidence that mothers treat siblings differently, however, is usually confounded by the fact that at the time of assessment the two siblings are of different age. In one study where mothers were observed with her two children when each was 12 month of age, considerable concordance between mother's behavior toward her toddlers was shown (Dunn, Plomin & Nettles, 1985).

The question of concordance of siblings' attachment quality to their shared mother is of considerable interest for attachment theory. This issue was already addressed by a study of adolescent mothers from an at risk sample (Ward, Vaughn & Robb, 1988). Concordance between sibling's quality of attachment to their shared mother was found to be only 57%. The lack of significant concordance was attributed to the generally low stability of attachment quality of infants in the high risk sample.

Starting from a study of attachment of infants from 106 families, we could wait for the birth of a next child. Mothers were regularly asked, whether they expected another child. When the subsequent infant i.e. the younger sibling was between 12 and 18 months old, the families were asked again to participate in a follow-up study. Thus, we could test for each sibling the toddler's pattern of attachment to mother and the mother's judgment of the toddler's temperament when each child was between 12 and 18 months.

## Method

The prospective study of the psychobiology of attachment and exploration in toddlerhood (Schieche, 1996; Spangler & Schieche, 1998) started with 106 families from lower to upper middle class and their healthy 12 to 15 month old infants. The families were recruited from weekly reports of births from the Regensburg newspaper. Criteria were two parents in the home, healthy birth, and medically normal development during the first year. Fifty-nine of the children were firstborns, 50% were girls. All assessments were done in the laboratory. The target toddler was assessed in the strange situation with mother. Three expert coders classified the infants for their pattern of attachment. Intercoder agreement for the three main classes A, B, and C was 90%, for assigning the D-status, it was 82%. Mothers were given the Toddler Temperament Scale (Fullard, McDevitt, & Carey, 1978) which they completed at home and sent back.

Over the subsequent years, 40 younger siblings were born. Due to moves and parental illness only 36 of the younger siblings could be assessed. Nineteen of the siblings were less than 3 years apart, 17 siblings had an age space of more than 3 years (range: 15 - 4,5 years).

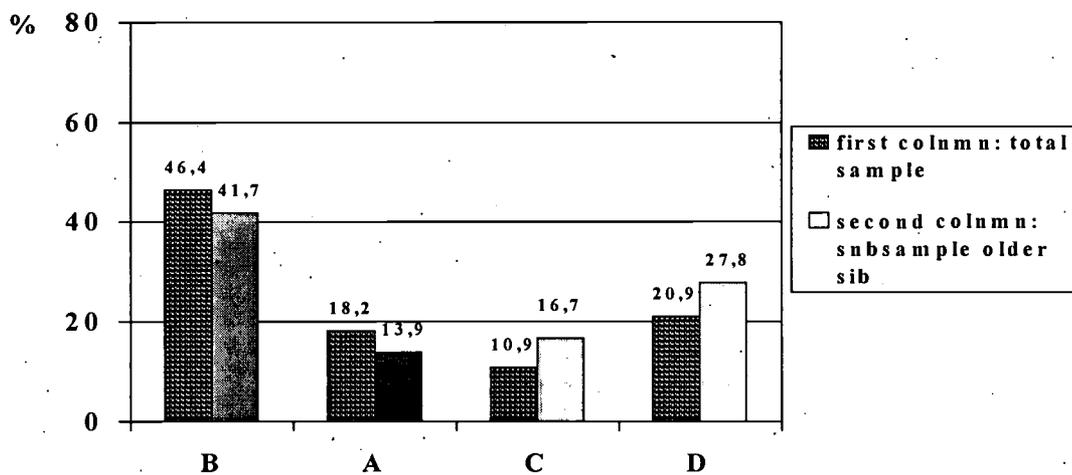
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The assessment in the strange situation took place in the same laboratory when the younger sibling was between 12 and 18 month old. Mothers completed again the Toddler Temperament Scale. Thus, maternal judgments of toddler temperament was available for the comparable age of the siblings. Mothers' temperament ratings were grouped into the three types "easy", "intermediate", and "difficult" according to Fullard, et al. (1978). Two mothers refused to fill out the TTS, thus temperament data are available for only 34 younger siblings.

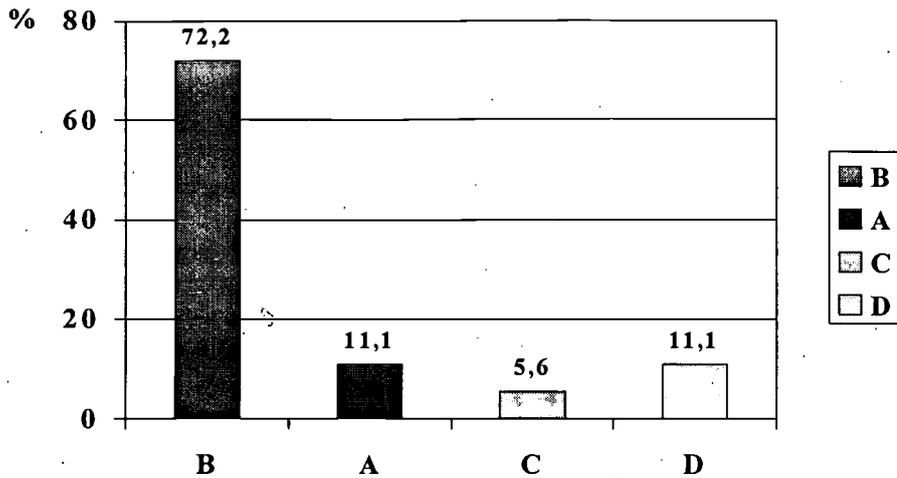
## Results

The distribution of attachment patterns for the whole sample of  $n=106$  was 48% secure, 19% insecure-avoidant, 11% insecure ambivalent, and 22% were given the D-status (disorganized). In the subsample of "older siblings" of  $n = 36$ , the distribution of attachment patterns was very similar, 42% secure, 14% insecure-avoidant, 17% insecure-ambivalent, and 28% were assigned the D-status (Figure 1).

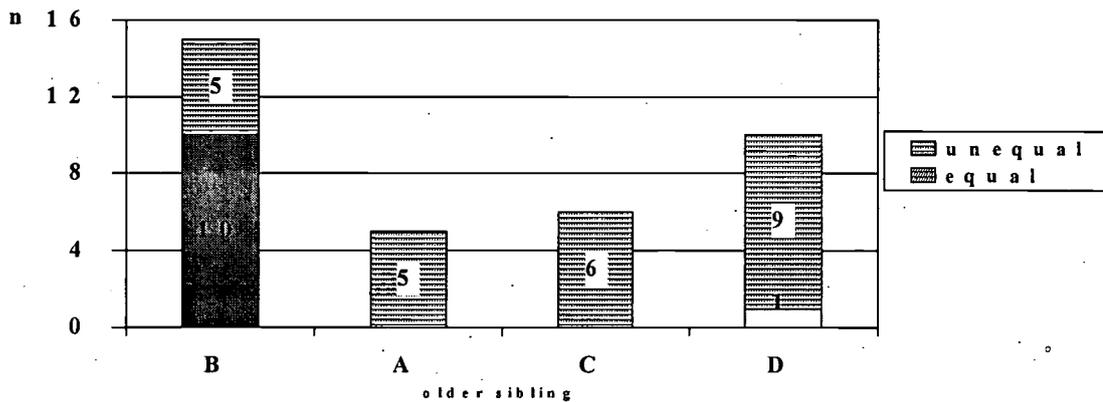


**Figure 1** Distribution of attachment patterns for the total sample ( $n=106$ ) and the subsample of older siblings ( $n=36$ )

Although the secure pattern was much more frequently observed among the younger siblings ( $n(B) = 24$  or 73%), the distribution of the four groups of attachment classes of the younger siblings, classified by independent raters, was not significantly different ( $n(A) = 4/12\%$ ,  $n(C) = 2/5\%$ , and  $n(D) = 3/9\%$ ) (Figure 2). No significant concordance was found for pattern of attachment of the two siblings to their shared mother (Figure 3 and Table 1).

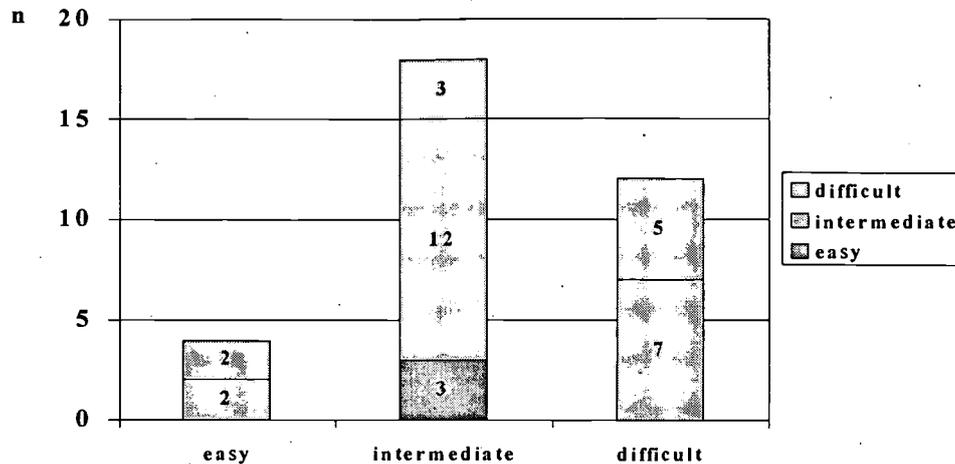


**Figure 2** Distribution of the four groups of attachment classes of the younger siblings



**Figure 3** Concordance of attachment patterns of sibling pairs

Distribution of the toddler's temperament types according to their mothers was for the whole sample "easy" 18%, "intermediate" 54%, and "difficult" 24%. For the subsample of older siblings, the respective distribution was 11%, 53%, and 36% (Table 2). For the sample of younger siblings, the respective distribution was 9%, 62%, and 29% (Table 2). Exactly 50% of siblings were grouped into the same temperament type (Figure 4). Thus, no significant concordance was found between the three temperament classes of the siblings.



**Figure 4** Concordance for the three types of temperament of the sibling pairs

Patterns of attachment were not systematically related to types of temperament, neither for the whole sample of  $n = 106$ , nor for the subsample of older siblings (Table 3) nor for the sample of younger siblings (Table 4). Concordance of patterns of attachment was tested for influences concordant or discordant gender of the sibling pairs, their temperament type, and their closeness in age (less or more than 3 years apart). No influence of these variables could be detected.

### Discussion

Less than a third of the sibling pairs were found to have developed similar patterns of attachment with their mothers in the first year of life. Their mothers rated their sibling pairs in 50% of the cases as similar w.r.t. one of three temperament types, in 50% of the cases as dissimilar. Concordance of gender, temperament type or closeness in age did not influence concordance of pattern of attachment of the sibling pairs.

The findings corroborate results reported by Fisher (1995) and McCartney and Diggings (1993). Both of these two studies reported 54% concordance of pattern of attachment of siblings using the traditional 3 classes A, B, and C. Using four classes in this study, concordance was expectedly less. Even for twins, no evidence was found for genetic influence on measures of attachment to mother in studies comparing monozygotic and dizygotic twins (Lytton, Martin, & Eaves, 1977; Plomin & Rowe, 1979).

Findings support the family systems perspective on attachment as advocated by Stevenson-Hinde (1990). Siblings seem to make unique experiences with their mother and their family. In a study comparing mother-toddler and father-toddler quality of play interaction with their patterns of attachment, quality of interactive play seemed to be a family style also related to SES of the family, whereas attachment relationships were found to be unique to a mother-child or father-child pair (Grossmann & Grossmann, in press).

In now four studies (Fisher, 1995; Grossmann & Horsch, 1999; McCartney and Diggings, 1993; and Ward et al. 1988) with a total of almost 150 sibling pairs, mothers were found to have an idiosyncratic attachment relationship with each child. These findings are a challenge to attachment theory and research. Assumptions about ONE maternal sensitivity, ONE maternal state of mind with respect to attachment, and intergenerational transmission of attachment to her children will have to be reevaluated and examined in further studies.

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Table 1 Concordance of Patterns of Attachment of Siblings in the Strange Situation

Classification of Older Sibling	Classification of Younger Sibling				Sum
	Secure (B)	Avoidant (A)	Ambivalent (C)	Disorganized (D)	
Secure (B)	10	1	1	3	15
Avoidant (A)	5				5
Ambivalent (C)	4	2			6
Disorganized (D)	7	1	1	1	10
Sum	26	4	2	4	36

11/36 (30%) of sibling pairs were concordant in their attachment classification w.r.t. 4 groups, 15/36 (41,6%) w.r.t. secure versus insecure.

Table 2 Concordance of Types of Temperament of Siblings According to Their Mothers' Ratings

Temperament Type of Older Sibling	Temperament Type of Younger Sibling			Sum
	Easy	Intermediate	Difficult	
Easy		2	2	4
Intermediate	3	12	3	18
Difficult		7	5	12
Sum	3	21	10	34

17/34 (50%) of sibling pairs were concordant in their types of temperament

Table 3 Patterns of Attachment of Older Siblings as Related to Temperament Type

Temperament Type of Older Sibling	Classification of Older Sibling				Sum
	Secure (B)	Avoidant (A)	Ambivalent (C)	Disorganized (D)	
Easy	1		1	2	4
Intermediate	11	3	1	4	19
Difficult	3	2	4	4	13
Sum	26	4	2	4	36

Chi-Square (df = 6) = 7,43, ns

Table 4 Patterns of Attachment of Older Siblings as Related to Temperament Type

Temperament Type of Younger Sibling	Classification of Younger Sibling				Sum
	Secure (B)	Avoidant (A)	Ambivalent (C)	Disorganized (D)	
Easy	2		1		3
Intermediate	16	3		2	21
Difficult	8			2	10
Sum	26	3	1	4	34

Chi-Square (df = 6) = 13,3, p = .039, but not interpretable because of the very skewed distribution.



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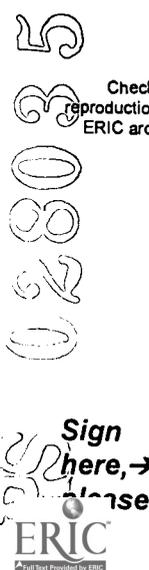
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