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ABSTRACT

A study was designed to examine the attachment behavior of 28 preschool deaf children and their hearing mothers and compare their patterns of behavior to previous reports of normal hearing dyads, and within this sample examine the relationship between communicative ability and phase of attachment. The sample was subdivided by communication method--oral or total. Among findings were that the majority of children displayed no distress during separation; that upon reunion, about half of the children showed sociable behavior without proximity seeking, while the other half showed approach behavior, often combined with ignoring or resisting behavior; and that communicative competence was highly related to display of the Phase IV (goal-corrected) partnership. (SBH)

ATTACHMENT IN PRESCHOOL DEAF CHILDREN

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by

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Recently there has been great interest in the relationship between the development of maternal-offspring attachment and the offspring's developing communicative abilities. In both human and non-human primates it appears that attenuation in the frequency of maternal-offspring attachment behavior is intimately related to the offspring's increasing ability to communicate effectively both with mother and other conspecifics. Of particular interest here is the relationship between the decrease in the human child's insistence on close proximity and his/her increased communicative and linguistic competence.

Because communicative milestones and phases of attachment are both highly correlated with chronological age in hearing children, it is very difficult to directly examine their relationship in a normal human population. The profoundly deaf child provides a regrettable but valuable natural experiment for examining the ontogenetic relationship between communicative abilities and the developing parent-offspring attachment relationship. This is because the deaf child's communicative competence varies in a linear fashion more as a result of such variables as degree of hearing loss, age of diagnosis, and amount of school experience than it does merely as a result of maturation or age. The examination of deaf child-hearing mother attachment also provides us with possible alternative pathways of communication and speaks to the multidetermined nature of developing social relationships.

The purpose of this research was to (1) examine the attachment behavior of preschool deaf children and their hearing mothers and compare their patterns of behavior to previous reports of normal hearing dyads, and (2) within this deaf sample examine the relationship between communicative ability and phase of attachment.

Bowlby (1969) and Ainsworth (1973) in developing an ethological-evolutionary theory of attachment, posited four developmental phases of the attachment system in early childhood. Phase III which begins at about eight months of age is characterized by the advent of the infant's active attachment behavior with which he/she actively maintains a certain degree of proximity and/or contact with attachment figure(s). During Phase III the child views the attachment relationship in concrete spatial-temporal terms and the set-goals is a specified, but variable degree of proximity. Two important changes occur in the attachment system during the preschool years. First, in the later part of Phase III there is a significant decrease in distress upon brief separations in laboratory analogue settings. While most children under 2½ become upset when separated, children over 2½ usually don't show distress. However, until sometime in the third year children usually seek proximity to their mother upon reunion. This decrease in distress is probably due to maturation, experience at separation, and the fact that mother can now verbally communicate about the separation prior to its occurrence

During the preschool years the mother-child dyad becomes increasingly adept at constructing joint plans regarding separation. Bowlby (1969) proposed that Phase IV of attachment, termed the "goal-corrected partnership" begins when both mother and child operate in an intentional fashion to construct and maintain joint goals or plans regarding separation. At this point, the set-goal in the relationship becomes carrying out the mutually agreed-upon plan of action. The relationship is therefore more abstract and the child places less reliance on physical proximity per se. Marvin (1977) found that most 4-year-olds showed Phase IV patterns with their mothers, that is, child and mother jointly agreed upon a plan for departure and reunion, the child explored without distress while alone, and the child showed sociable behavior without proximity-seeking upon reunion. However, none of the 2-year-olds and only 25% of the 3-year-olds

showed this Phase IV behavior. In order to accomplish the planning that is characteristic of Phase IV behavior it would appear necessary that the child understand communication dealing with non-present temporal events. It is hypothesized that Phase IV behavior and the ability to discuss non-present events results from the development of an arbitrary sign system which is probably present only in man.

Most deaf preschoolers are unable to communicate about non-present objects and events. It has been hypothesized that this inability leads to increased dependency in this population (Altshuler, 1974). It is therefore hypothesized that the communicative competence of the dyad, and more specifically the ability to discuss non-present events should be related to attainment of the Phase IV goal-corrected partnership.

Additionally this study examined two types of deaf children: those taught by oral methods and those who use total communication. Education by the oral method includes the training of speech, speechreading (lipreading), and use of residual auditory skills. This method has shown to be effective for only a minority of profoundly deaf children. Total communication training includes the use of all possible methods of communication, including the use of both oral methods and sign language or manual communication. Over half of preschool deaf children in United States are now being educated in total communication classrooms. It is hypothesized that total communication dyads would show more sociable and less negative attachment behavior than oral dyads. This is due to the greater stress in mother-child interaction in oral dyads who attempt to rely only on speech for communication. There has been no research to date on attachment in deaf children or on differential effects of total vs. oral communication training.

Sample

The sample consisted of 28 deaf preschool children with hearing parents from the metropolitan Washington, D.C. area. Of importance to note is that 90% of all deaf children are born to hearing parents. The children met the following requirements: (1) non-verbal intelligence within the normal range; (2) unaided hearing level no better than 30 decibels in the better ear averaged across the speech range (500 to 4,000 hz); (3) no additional handicaps that would create additional difficulties in the child-caregiver bond, and (4) age between 3 and 5½ years old. Data collection took place at Gallaudet College in Washington, D.C The sample was subdivided by communication method and included 14 total and 14 oral dyads. The two groups were matched on age, sex, social class, race, and parity.

Procedure

Each mother-child pair was observed in a laboratory setting that included a 15-minute repeated separation procedure which consisted of five episodes (See Table 1). The situation was video-taped through one-way mirrors. Mothers were instucted that they could communicate as much as they wished regarding their separation.

A one-way Anova revealed that there were no significant differences in ratings of communicative competence between the total and oral dyads. However, the total dyads received higher mean scores. This result was both interesting and unexpected, however I will not be able to discuss its implications today. Because of no difference in communication between total and oral, and because level of communicative competence was hypothesized to be a significant factor, the sample was redivided above and below the median on a 7-point rating scale of reciprocal understanding, regardless of the communication method (total or oral) used. This subdivision yielded four dyad subgroups of equal size (Table 2 This sample split by reciprocal understanding was cross-validated by additional

measures of communication which also revealed significant differences between subjects categorized as high vs. low communications. Most importantly, high communicators were the only children who showed the ability to discuss non-present object and events.

A demographic analysis revealed that high communicators were older, had more months of school experience, and were diagnosed and received their aids earlier in life than less successful communicators. However, analysis of covariance revealed that the distinguishing factors between high and low communicators were age of discovery and amount of school experience, not their present age.

The attachment measures I will discuss today were categorical codings of pre-separation planning, separation behavior, and reunion behavior. From these measures the children were classified as showing Phase III or Phase IV patterns of attachment. The three categories of pre-separation planning were: agree to mother's plan for departure, disagree, or show no response. Separation categories were play while alone, play and search, or show distress. Reunion categories included sociable behavior without proximity seeking, approach, ignoring, and resisting behavior. Children were classified as Phase IV if they (1) jointly agreed to mother's departure plan, (2) played alone without distress, and (3) showed sociable behavior without proximity-seeking upon reunion.

Results

Pre-separation planning. Table 3 presents the attachment patterns for each experimental group. Contrary to expectations, the great majority of children, regardless of group, agreed to mother's plan for departure. It was hypothesized that the oral children who were in the low communication group would be more likely to disagree with mother's plan and show distress because of their lack of comprehension of mother's verbal explanation. Interestingly, in this low communication oral subgroup, 5 to 7 mothers resorted to a frequently used

familial "hand sign" to convey this crucial information (either palm open facing out, or index finger extended facing out). This was the only time any of these mothers used sign during the entire situation. In turn, upon seeing this sign four of the five children signed it back to their mothers and nodded their heads confirming their comprehension and approval of the message. Simultaneously with their signing, the mothers gave extended verbal explanations, but it was not until they used the sign that the children showed agreement.

Alone Behavior. The great majority of children displayed no distress during separation. They either played intently or played with occassional search behaviors such as calling for mother, looking for her, or approaching the door. There were no significant differences between the experimental groups. However, more high communicators tended to play and fewer tended to search or become distressed than did the low communicators (X^2=4.7, df=1, p <10).

Reunion Behavior. Upon reunion, about half of the children showed sociable behavior without proximity-seeking, while the other half showed approach behavior, often combined with ignoring or resisting behavior. Just among the children who showed approach behavior, more total communication children showed sociable behavior, while more oral children showed patterns incorporating negative affect and/or ambivalence with their approaches, Fisher's Exact Test, p = .001. And the majority of the children who showed approach behavior were low communicators. Chi-square test also revealed that more high communicators showed sociable behavior without approach upon reunion than did the low communicators, X^2 = 3.6, df = 1, p = .06.

Phase of Attachment. Each child was categorized into Phase III or IV by examining his/her behavior during the three preceding contexts. As hypothesized, high communication dyads, regardless of communication method, were significantly more likely to display the Phase IV goal-corrected partnership pattern than were low communication dyads (X^2 = 9.2, df = 1, p < .005). That is, more high

communication children were likely to have (1) approved of mother's plan for departure, (2) showed no distress during separation, and (3) greeted and interacted sociably with mother upon reunion without seeking her proximity. While 78% of the high communicators were classified as in Phase IV, only 14% of the low communicators showed this pattern.

Partnership classification was high related to both ratings of communicative competence ($r = .64$, $p < .001$) and months of school experience ($r = .43$, $p < .01$); communicative competence and school experience were also highly related to each other ($4 = .68$, $p < .001$). While attainment of Phase IV was highly related to communicative competence, a one-way ANOVA did not show significant age differences between Phase III and Phase IV children, $F(1, 24)$ 3.1, $p = .11$. Attainment of the Phase IV partnership was related to a number of hypothesized communication variables, most importantly Phase IV children communicated more frequently about non-present objects and events during the observations, $F(1, 24) = 6.8$, $p < .01$, and were reported by their mothers to both comprehend, $F(1, 24) = 6.1$, $p < .05$, and use more words dealing with time, $F(1, 24) = 11.7$, $p < .01$. Additionally, mothers of partnership children reported less pressure to constantly watch their children, $F(1, 24) = 9.6$, $p < .01$, and more of them felt they had better control over their child's behavior ($X^2 = 3.7$, $df = 1$, $p = .05$).

It had been expected that deaf children, especially those with unusually low communication skills would be more likely than hearing preschoolers to show distress upon separation. This hypothesis was not confirmed; very few deaf children were distressed by separation regardless of either their competence level or method of communication. This finding is comparable to those reported in recent research with normal hearing preschoolers. Of particular importance was the fact that even the oral children who had very little speech

and therefore very little communicative skill were not distressed (even though they showed resisting and ignoring behavior mixed with approach at reunion).

However the use of specific gestures by mothers of this low oral subgroup immediately prior to separation probably accounts for the absence of distress. While the low oral mothers reported that their children did not understand speech concerning future events, the children did understand that their mother's sign prior to departure assured them that she would return shortly. It is interesting that these mothers resorted the use of signs only in this situation in which they felt the information conveyed was crucial for the child...and some of these mothers reported being unconscious of their signing (and something that they are theoretically opposed to). This encoding of a great deal of information in a single sign shows the adaptability of the attachment system to such deficits as lack of auditory processing, yet still maintaining the desired outcome of lack of distress.

Most importantly from a theoretical perspective was the hypothesized finding that level of communicative competence was highly related to display of the Phase-IV partnership. While Marvin (1977) presented correlative evidence in normal children that changes in cog/communicative skills were related to the Phase IV partenrship, this study experimentally validated this finding. That is, within this deaf sample, level of communicative competence not age was associated with qualitatively different patterns of attachment. However, because communicative competence in most cases is delayed in deaf children, the age of attainment will be somewhat delayed for Phase IV behavior.

Because the great bulk of attachment research has been derived from a non-human primate model and focused on infancy in humans there has been a neglect of the effect of language variables on the growth and change in the attachment system. In this study it appears that single gestures are sufficient to reduce separation distress. However, to display Phase IV behavior

based on congruent plans of both mother and child that (1) mother offer more detailed information prior to departure, and (2) the child be able to comprehend this information which requires the child to understand and act on language regarding non-present events. These findings would suggest the need for closer examination of the role of the mother-child communication system in the development of attachment...and the more general need for human ethologists to examine language as a crucial behavior in our research.

TABLE - 1

BEHAVIOR OBSERVATION PROCEDURE

Episode	Participants	Length (Minutes)
1	Mother and Child	3
2	Child Alone	3
3	Mother and Child	3
4	Child Alone	3
5	Mother and Child	3

TABLE - 2

SUBGROUP BREAKDOWN BY COMMUNICATION LEVEL AND METHOD

Total N = 28

Competence	Total	Oral	
High	7	7	14
Low	7	7	14
	14	14	

Method

TABLE - 3

INCIDENCE OF ATTACHMENT PATTERNS BY COMMUNICATION METHOD AND LEVEL

SEQUENCE	TOTAL	ORAL	HIGH	LOW
PRE-SEPARATION PLANNING				
AGREE	9	11	9	11
DISAGREE	3	0	2	1
NO RESPONSE	2	3	3	2
ALONE BEHAVIOR				
PLAY	7	7	10	4
PLAY & SEARCH	4	5	3	6
DISTRESS (NO PLAY)	3	2	1	4
REUNION				
SOCIABLE	8	6	10	4
CONTROLLING	1	0	1	0
APPROACH SOCIABLE	4	1	2	3
APPROACH WITH IGNORING AND RESISTING	1	7	1	7