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ABSTRACT

The ability of infants to recognize their mothers as distinct from others was investigated by presenting 6 boys and 6 girls at two age levels (5 weeks and 13 weeks) with the following six sequential stimulus conditions: (1) mother's face (MO); (2) stranger's face (SO); (3) mother's face with stranger's voice (MS); (4) stranger's face with mother's voice (SM); (5) mother's face with mother's voice (MM); and (6) stranger's face with stranger's voice (SS). Infants' responses were videotaped. Dependent measures in each condition were total visual fixation to the adult and length of first fixation to the adult. Both age groups discriminated mothers from stranger in the congruent face-voice conditions (MM and SS) by showing longer first fixations to the stranger. The older group also discriminated mothers from stranger by the same measure in the face-no voice conditions (MO and SO). These result suggest that the original discrimination of mothers is not based on visual recognition alone. The older group discriminated between congruent and incongruent face-voice conditions by showing longer first fixations to the incongruent conditions (MS and SM) indicating that by 13 weeks infants have developed specific face-voice expectations for their mothers. There was more total fixation to all the stimulus conditions with age. (Author/MS)

Infants' Recognition of Their Mothers'

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Infants learn to recognize their mothers as distinct from other people. This basic discrimination must occur before more complex infant-mother interactions, which ultimately lead to attachment, can develop.

One question this study is concerned with is how soon the recognition of mother occurs.

A second concern is whether the recognition is primarily a visual one. That is, do young children initially recognize their mothers by visually distinguishing them from others or do cues from other modalities, specifically auditory cues, play an important role in early recognition? There is some indication from the literature that mother's voice may in fact play a significant role in the early recognition of her person. In Peter Wolff's (1963) work on smiling he noted that it was the mother's voice rather than her face which elicited one of the first smiles to external stimuli. By five weeks of age the child's smiles were readily elicited by the mother bending over the crib and talking to the infant, yet they were not reliably elicited if the mother simply bent over the crib without talking.

If the infant's early recognition of his mother does involve auditory cues as well as visual cues the question arises whether

the infant has the ability to coordinate the distinctive visual and auditory stimulation from his mother to form specific sight-sound expectations. That is, would the mother speaking with a voice which is not her own or another person speaking with the mother's voice be unexpected events for the baby? Piaget (1952) suggests the coordination between visual and auditory stimulation occurs around three months of age, as indicated by the child's ability to look at what he hears. Aronson and Rosenbloom (1971), however, report that one and two month old infants show distress to spacial displacement of face and voice, suggesting an earlier learning of sight-sound coordination.

The present study investigated infants ability to recognize distinctive visual and auditory stimulation from their mothers by presenting them with matched and mismatched face-voice combinations of mother and stranger as well as mother's and stranger's faces without voices.

The subjects were 24 babies, 6 boys and 6 girls at each of two age levels, 5 weeks and 13 weeks.

Each infant was observed for 12 trials which consisted of two series of presentations of six stimulus conditions. There were two matched face-voice conditions. In one the infant saw the mother speaking with her own voice. In the other the infant saw the stranger speaking with the stranger's own voice. There were two mismatched face-voice conditions. In one the infant saw

the mother speaking with the stranger's voice. In the other the infant saw the stranger speaking with the mother's voice. And there were two no voice conditions. In one the infant saw the mother but did not hear any voice. In the other the infant saw the stranger but did not hear any voice.

In each condition either the mother or the stranger sat facin the infant who was in a baby seat facing the adult about 50 cm awa The stranger was an adult female. Each condition was approximatel 45 seconds long.

In the voiced conditions a prerecorded tape was played of either the mother or the stranger saying a standard script. The mother and the stranger had prior instructions to give lip synchronization to the tape. The tape recorder was located at head level directly behind the adult so that the voice appeared to come from the adult in a natural manner. In the matched face-voice conditions the voice played on the tape was that of the same person the child was seeing. In the mismatched face-voice conditions the voice played on the tape was not that of the person the child was seeing. In the no-voice conditions no voice was played on the tape recorder. Mother and stranger were instructed not to actually speak or make sounds in any of the conditions.

The infants responses were videotaped. The tape recorder and the videorecorder were screened from the infants' view. Dependent measures in each condition were total visual fixation to the adult and length of first fixation to the adult.

The results indicate that both the 5-week olds and the 13-week olds could distinguish mother from stranger in the matched face-voice conditions as measured by the length of first fixation. Infants at both age levels looked significantly longer at the stranger than at mother when visual and auditory stimulation was appropriately matched. That is, infants at both age levels had the longest initial fixation to the more novel stimulus configuration -- that of a stranger talking to them as opposed to their mothers talking to them.

If only visual cues were present, however, as in the no-voice conditions, only the 13-week olds distinguished mother from stranger, again by significantly longer first fixations to stranger. The 5-week olds made no distinction between mother and stranger when no voice accompanied the face they were seeing.

The 13-week olds also discriminated between the matched and mismatched face-voice conditions by showing significantly longer first fixations to the mismatched conditions, which were the more novel. That is, they were more attentive to the mother talking with an unfamiliar voice or an unfamiliar person talking with the mother's voice than they were to what appeared to be the more familiar situation of the mother talking to them or a stranger talking to them. This differential responding is evidence that children as young as 13-weeks have developed specific expectations of the pairing of mother's face and voice.

The 13-week olds showed significantly more total visual fixation to all the stimuli conditions than the 5-week olds which suggests there is increased attention to these stimuli with age. The girls showed more total visual fixation at both age levels.

In summary, both the 5-week olds and the 13-week olds showed longer first fixation to the stranger in the matched face-voice conditions. In the no-voice conditions the 13-week olds showed longer first fixations to the stranger, whereas the 5-week olds showed no distinction between mother and stranger when no-voice accompanied the faces. In addition, the 13-week olds had longer first fixations to the mismatched conditions compared to the matched conditions.

The results suggest that the original discrimination of mother from other is not based on visual recognition alone. Auditory cues play an important role in children's ability to initially distinguish their mothers. By 13-weeks of age the infants have the ability to coordinate what they see with what they hear to the extent that they have developed specific visual-auditory expectations of their mothers.

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