# Andrew N. Meltzoff:

## Social Cognition, Imitation, Cross-Modal Perception, Infant Development

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Andrew N. Meltzoff was born on February 9, 1950 in the United States. He studied psychology at Harvard University and did graduate work at the University of Oxford, in England, with Jerome Bruner, earning his doctorate there in 1976. Meltzoff began his professional career at the University of Washington in 1977, serving as a Professor of Psychology since 1988. He is currently co-director of the University of Washington Institute for Learning and Brain Sciences, an interdisciplinary research center.

Meltzoff's work centers on young children's social and cognitive development, focusing primarily on early social cognition in infants and toddlers. His earliest work, in the 1970's, demonstrated that newborns had the ability to imitate facial gestures. This work was controversial at the time, as few thought infants capable of imitating others. However, this work has been replicated many times since then, and most infant development researchers would agree that newborns can imitate facial gestures, such as sticking out the tongue or opening the mouth wide. Before Meltzoff's work on imitation, it was thought that children needed much more advanced cognitive abilities in order to imitate another person. However, the view that the ability to imitate is present at birth is now widely accepted.

Meltzoff is also noted for his studies of infants' cross-modal perception, where infants can coordinate their perceptions from different modalities, such as vision and touch. He

demonstrated this in a study where young infants sucked on a pacifier with bumps and then associated that with a picture of a pacifier with a bumpy texture.

In both these areas, Meltzoff thought that infants' imitation and cross-modal perception were possible through an active matching process by the infant, with this process being mediated by an infant's abstract representation of both modes of perception--such as visual and motor (when imitating facial gestures) or vision and touch (in the bumpy pacifier study). Further, in Meltzoff's later writing, he maintains that this "active intermodal matching" is the underlying mechanism for early imitation as well as for children's later social cognition and development of a theory of mind.

In 2005, Meltzoff put forward his theory of infant social cognitive development, describing how infants progress from newborn imitation to later social cognition. He calls this the "Like-Me" framework. He proposes that newborns' understanding or recognition of the similarities between themselves and other people—that they use as they imitate in the first few days of life—is the foundation for later social cognition, rather than the outcome of advanced social understanding. He argues that infants use their understanding of themselves, along with their recognition of the similarities between themselves and others, to understand other people and their goals and intentions. Since infants innately recognize that other people are "like me," they use this awareness to help them understand other people. In addition, Meltzoff maintains infants can use their observations of others to help them understand their own behavior and possible consequences of their behavior since others are "like me." Meltzoff maintains, "the bedrock on which social cognition is built is the perception that others are 'like me'" (Meltzoff, 2007, p. 126).

In further support of his ideas, Meltzoff has studied infants' gaze-following and joint attention, working out that infants understand that they are tuning in to what others see as they follow another person's gaze or head turn to look at something new. Some researchers had proposed that infants are only copying or following the action of another person turning their head. However, Meltzoff has shown in his research that infants understand they are following the other person's focus of attention. He has shown that infants only follow another person's gaze if they know the other person can see something as they turn their head. If a person is blindfolded, the infant will not copy or follow the head turning of another person.

Meltzoff has been a pioneer in research on infants' early social understanding throughout his career, publishing over 200 scientific papers and co-authoring multiple books on early childhood development and learning. He has contributed greatly to our understanding of how humans begin as social beings from birth and continue to develop as thinking and actively processing social beings from this early foundation.

**Further Reading**

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