The role of social interaction in guiding children's development is receiving increasing attention as an explanation for children's rapid learning (Azmitia, 1988; Newman, Griffin, & Cole, 1989; Rogoff, 1986, 1990; Valsiner, 1987; Vygotsky, 1978; Wertsch, 1979). This increasing emphasis on the facilitating role of adults and peers helps to place child development in context, rather than focusing on individual children as if they develop in a vacuum, uninfluenced by the people around them and by the social and technological inventions they learn to employ.

However, a balance is needed in which the child's own efforts to learn and to employ social tools is recognized, along with the socialization attempts of those around the child (Rogoff, 1990, 1991). Child development is a collaborative process, with active involvement of children as well as of
caregivers. This chapter examines the play interaction of infants and adults, focusing on the attempts of infants to direct the actions of adults, as they deliberately attempt to use others to accomplish actions of which they are not independently capable or which require mutual involvement.

Our focus on adult-child communication as a forum for children's development can be related to research on social referencing that points out that infants attend to the intents and emotions of adults as a means of guiding their understanding of new situations (Feinman, 1982; Gunnar & Stone, 1984; Sorce, Emde, Campos, & Klinnert, 1985). Adults provide infants with cues regarding the nature of situations, models of how to behave, and interpretations of behavior and events (Rogoff, 1990).

Like the literature on social influences on children's learning, the literature on social referencing has thus far limited the child's role to being a recipient of adult messages. However, we propose that social referencing is a mutual activity, embedded in a stream of two-way social interaction, where both participants are motivated by their own goals and engage in social referencing as a way to negotiate their goals. Social referencing often has been examined as one-way communication, in which an adult displays some type of emotional reaction to an unusual stimulus (such as a large toy spider), and a child's use of these cues to interpret the situation is studied. The interpretation of their communication does not take into account the information and influence provided by the child.

While it has been very fruitful to examine children's social referencing of adults, it is also important to recognize that children may be sources of information, as adults attempt to understand their intentions in ongoing social interaction, and infants may actively attempt to influence adults' understanding of situations to promote the infants' own goals. In this chapter, we focus on infants' contributions to mutual social referencing as adults and infants attempt to understand and influence each other. Since infants' skill in and methods for providing communication to influence adults' actions presumably change with age, we examine developmental changes, focusing on infants' strategies for using adults instrumentally to achieve goals which infants are unable to reach alone.

We examine the development of infants' instrumental use of adults using longitudinal observations of one or the other of two middle-class U.S. infants interacting with 21 middle-class adults at 2- or 3-week intervals from the age of 4 to 15 months. We explore developmental changes in the extent to which the babies initiated an episode that appeared designed to use an adult instrumentally, the degree of agreement of independent observers that this had occurred, and developmental changes in the nature of the babies' goals and the means they used to reach them.

Our perspective is built on Bruner's work on intentional communication in infancy and Vygotsky's theory which emphasizes the role of chil-