Abstract

Vocal development research in the first year of life has shown considerable progress in recent time. Solid empirical evidence now suggests infants vocalize systematically in very early development, as indicated by: 1) spontaneous vocalization in the first month (Stark, 1980); 2) emergence of “protophone” categories produced repetitively by three months (Kwon et al. 2007), 3) functionally flexible use of protophones by three months (Oller et al., 2013; Scheiner & Fischer, 2011), 4) vocal responsivity of infants in face-to-face interaction by three months (Trevarthen, 2001), and 5) the ability to adjust vocalization rate to engage a non-responsive parent by 5 months (Franklin et al., 2014; Goldstein, et al. 2009; Yale, et al. 1999). The recent availability of all-day recordings (Oller et al., 2010; Warren, et al. 2010; Zimmerman et al., 2009), enables us to sample randomly or semi-randomly across the entire naturalistic day of infants, and thus it is now possible to estimate using real-time coding the amounts of infant vocalization that occur in a variety of key circumstances, in particular when: 1) the infant is alone and awake, 2) the infant is being spoken to by a caregiver who is attempting to elicit interaction and vocalization, 3) persons other than the infant are talking to each other but not to the infant, within close range of the infant, and 4) when the infant is trying to engage the unresponsive caregiver or is otherwise expressing distress. These estimates make it possible for us to assess key questions about the origin of human communication, since vocal language requires the ability to produce vocalization spontaneously, to engage in back and forth “conversation”, and to use vocalization as a means to initiate interaction or to obtain assistance.

Rapid growth in both coding technologies and in automated recognition of vocalization and vocal interaction patterns are laying the foundation for much more empirically useful comparisons across infants with and without disorders, infants from a variety of cultures, and for useful comparisons of vocal communication across species. In particular, there is considerable reason for hope that these methods will contribute to early identification of disorders such as autism (Oller et al., 2010; Warren et al. 2010).