## Social Cognition: Views from developmental and comparative psychology, and robotics on the role of emotion in joint attention.

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## Abstract

Most human infants, by 12 months of age, have developed a suite of triadic engagement skills, specifically, joint attention, social referencing, and intentional communication (e.g., Russell et al., 1997). Developmental psychologists emphasised the cognitive underpinnings of how infants become able to coordinate their engagement with people and their engagement with objects to form the referential triangle of infant- mother-object (triadic) engagement (e.g., Bard, 1992). Developmental psychology provided the conceptual frame for many studies of comparative cognition, and some comparative psychologists have asserted that this suite of triadic engagement skills specifies the beginning of the uniquely human 'social cognitive revolution'. New evidence emerging from the FEELIX GROWING project (Canamero, 2008: Hiolle et al., 2009) highlights the importance of emotion (e.g., Murray et al., 2009), and suggests a simple learning system can account for the development of triadic engagements (e.g., Boucenna et al, 2010). Evidence emerging from my developmental comparative studies (e.g., Bard & Leavens, 2009) and those of my colleagues (e.g., Leavens et al., 1996, 2005) indicate that emotion plays a crucially important role in the development of social cognition in young apes, as well (Bard, in press; Bard et al., 2005; Leavens et al., in press).

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