10

Emerging Self-Concept

Philippe Rochat

Questions regarding the origins and nature of self-knowledge are arguably the most fundamental in psychology. What is knowledge about oneself made of and where does it come from? The aim of this chapter is to discuss recent progress in infancy research that sheds a new light on these questions. The issue of whether self-knowledge finds its root in language development is first considered. On the basis of recent empirical evidence, I will then assert that self-knowledge does not depend exclusively on language development. Infancy research demonstrates that self-knowledge is expressed at an *implicit* level long before children become symbolic and competent talkers. The main idea running through the chapter is that at the origin of explicit and conceptual self-knowledge (i.e., self-concept) is an implicit knowledge about the self developing in the preverbal child. My focus is on the nature of early implicit self-knowledge and its link to later emerging explicit self-knowledge.

In general, I will try to show that infants from birth, and particularly from 2 months of age, develop two types of implicit self-knowledge. On one hand, infants develop implicit knowledge about their own body via self-exploration and self-produced action on objects. On the other, they develop specific knowledge about their own affective dispositions via interaction and reciprocation with others. The origins of these two types of implicit self-knowledge are respectively *perceptual* and *social*.

Prior to this presentation, let me briefly situate the origins of self-knowledge in relation to language and the emergence of symbolic functioning by the second year of life.

The Wiley Blackwell Handbook of Infant Development, Second Edition. Edited by J. Gavin Bremner and Theodore D. Wachs.

"adopting the self as audience and as sole witness of...ourselves..."

Self and Language

We all have some notions of who we are and what distinguishes us from others. We know what we look like, have some sense of our relative power, the personality we project onto the world, including individuated and abstract things we claim as "ours." We have a sense of what belongs to us and what does not, the things we excel in and those we do not. In short, we all have some explicit conception of ourselves, a so-called explicit *self-concept*. The explicit self-concept of adults is to a large extent articulated in words as we frequently engage in talking about ourselves, perform silent monologues, and display a universal compulsion for internal speech, adopting the self as audience and as sole witness of ... ourselves.

An explicit, hence reflective conception of the self is already apparent at the early stage of language acquisition. As argued by Bates (1990, p. 165) "the acquisition of any natural language requires a preexisting theory of self – a theory of the self as distinct from other people, and a theory of the self from the point of view of one's conversational partners." By 18 months, infants start to mark contrasts between themselves and other people in their verbal production. They express semantic roles that can be taken either by themselves or by others (Bates, 1990). Does that mean, however, that the nature of self-concept is primarily linguistic? In other words, does it imply that the roots of an explicit sense of self are to be found in language and its development?

It is feasible that self-concept emerges under the pressure of growing linguistic competence, and is essentially a linguistic epiphenomenon. With language would come self-marking and labeling, with children somehow compelled to become explicit about who they are in terms of their own desires (e.g., "Candy!"), beliefs (e.g., "Katy nice!"), feelings (e.g., "Happy!"), and other states of mind (e.g., the unfortunately too typical "Mine!"). Communicating verbally does indeed require much explicit reference to the self as the subject of action, intentions, and beliefs.

The idea that the emergence of self-concept is linked to the development of language finds corroboration in the roughly synchronous developmental timing of mirror self-recognition in the young child. By the time children start to utter their first conventional words, using arbitrary sounds that are acknowledged by their community as standing for things in the world, in particular possessives like "mine!" at around 21 months of age (Tomasello, 1996), they also start to show clear signs of self-recognition in mirrors and photographs. It is also by the middle of the second year, around the time children typically start to show some fluency and their vocabulary tends to explode that they start to show self-referencing (e.g., pointing to themselves) and self-conscious emotions (e.g., embarrassment) in front of mirrors (Lewis & Brooks-Gunn, 1979). In the context of the famous mirror "rouge task", this is evident when children perceive their own reflection, noticing that a stain of rouge has been surreptitiously smeared over their face (as an illustration, see Figure 10.1 below).

From the perspective of evolution, formal and generative language is a cardinal aspect differentiating humans from other animal species. Interestingly, self-concept is also a trademark of humans, with the exception of only a few other species, including some of our close great ape primate relatives who demonstrate mirror self-recognition in the context of the "rouge" task (i.e., orangutans and chimpanzees, see the thorough review

Figure 10.1 Self-referencing and embarrassment manifested by an 18-month-old infant in front of a mirror during the rouge test. *Source*: Photo Pascale L. R.

by Tomasello and Call, 1997). Thus, if language and self-concept are connected in child development, they also appear to be linked as major cognitive trademarks in primate evolution (Gallup, 1982; Povinelli, 1993).

In child development, although language and explicit self-concept appear connected in the timing of their emergence, this does not mean that they are mutually dependent. On one hand, there are good grounds for assuming that language acquisition and the learning of word meanings rest on an understanding of self as intentional. When children hear a new word and learn that *this* particular word stands for *that* specific object or event in the world, they connect the intention of others with their own to communicate about objects and events in the environment (Tomasello & Akhtar, 1995). Children clearly show a distinct notion of others and of themselves as intentional communicators (Tomasello, 1995). On the other hand, children do not wait until they are symbolically competent to express some *implicit* or *preconceptual* self-knowledge. As proposed by William James over a century ago, it is necessary to distinguish implicit and explicit levels of self-knowledge.

Self-Knowledge without Language

In his seminal writing on the self, James (1890) distinguishes the "Me" and the "I" as two basic aspects of the self: The "Me" corresponds to the self that is identified, recalled, and talked about. It is the conceptual self that emerges with language and which entails explicit recognition or representation. It is beyond the grasp of infants, who by definition

are preverbal, not yet expressing themselves within the conventions of a shared symbol system. On the other hand, there is the self that is basically implicit, not depending on any conscious identification or recognition. The "I" is also referred to as the *existential self* (Lewis & Brooks-Gunn, 1979) or the *implicit self* (Case, 1991). It is, for example, the sense of their own body expressed by young infants when they start to reach and grasp objects around them. Infants implicitly express a sense of themselves as agent (reachers) as well as a sense of their own physical situation in the environment (objects around them are perceived by the infant as reachable and graspable depending on size and distance, see Rochat, 1997). Infancy research shows that the "I" is expressed long before any signs of a conceptual (explicit) sense of self (the "Me").

If we accept James's distinction, the question is what kind of relation these two fundamental aspects of the self entertain, and in particular, how do they relate in their development? One possibility is that they develop independently of each other and that somehow their functioning is parallel and unrelated. Another possibility, proposed here and supported by infancy research, is that the development of the conceptual self emerging by the second year is *rooted in* and *prepared by* an implicit sense of self already present at birth and developing from the outset (the early sense of an existential self or "I" following James distinction).

In the tradition set by James but expanding his work, Neisser (1991) further distinguishes two kinds *of implicit self* or *Is* manifested in early infancy, long before the developmental emergence of a conceptual self. Neisser proposes that from the outset of development, infants have two kinds of selves within either the social or physical domain. Each domain provides the infant with specific perceptual information specifying different aspects of the self: the *interpersonal* self in the social domain, and the *ecological* self in the physical domain.

The interpersonal self grows out of the infant's transactions with others, in particular the developing sense of shared experience and reciprocity. In the physical domain, infants develop a sense of their own body in relation to other objects, what Neisser labels the ecological self. The ecological self is the sense infants develop of their own physical body as a differentiated, situated agent in relation to other objects furnishing the environment. The ecological self develops as infants interact with physical objects and also as they perceive their own body directly via self-exploration (see below, Rochat, 1998; Rochat & Morgan, 1995).

Neisser's conceptualization of the self in infancy is justified based on a growing body of observations provided by infancy research (see Butterworth, 1995). We will see next that this research demonstrates that at the origin of development, infants manifest a sense of the ecological as well as the interpersonal self.

The Self in Infancy

Infants, from a very early age differentiate perceptually between self and nonself stimulation, namely between themselves and other entities in the environment. Early on, for example, infants differentiate between their own movements in the environment, whether passively or actively produced, and the independent movements of objects observed from

a stationary point in space (Kellman, Gleitman, & Spelke 1987). Young infants and even newborns respond with markedly different postural adjustments (e.g., straightening of the trunk or head movements) when they are surreptitiously set in motion, or if their surrounding is set in motion with them maintaining a stationary position (Bertenthal & Rose, 1995; Jouen & Gapenne, 1995).

Apart from being situated in the environment, infants also manifest an implicit sense of their own effectivity in the world. From birth, infants learn to be effective in relation to objects and events. For example, within hours after birth, neonates are capable of learning to suck in certain ways and apply specific pressures on a dummy pacifier to hear their mother's voice or see their mother's face (DeCasper & Fifer, 1980; Walton, Bower, & Bower, 1992). This remarkable instrumental learning capacity testifies to the fact that early in their lives infants manifest a sense of themselves as an *agent* in the environment, an important aspect of the (implicit) ecological self (Neisser, 1995; Rochat, 1997).

As we will see, in the social domain there is also good evidence of implicit self-knowledge. From at least 2 months of age infants start to reciprocate with others, smiling, gazing, and cooing in face-to-face exchanges with a social partner. They show some signs of what Trevarthen (1979) coined "primary intersubjectivity", the sense of shared experience infants manifest in dyadic face-to-face interactions. When social partners adopt a sudden still-face, staring at the infant with a neutral, frozen facial expression, infants from 2 months of age react with strong negative facial expressions: they gaze away, smile markedly less, and even cry (Toda & Fogel, 1993; Tronick, Als, Adamson, Wise, & Brazelton, 1978). This robust phenomenon suggests that infants already have an implicit sense of others, as well as of themselves, as reciprocating (social) agents. They expect social partners to reciprocate in certain ways to their *own* emotional displays. If they smile, they expect others to reciprocate with analogous emotional expressions.

Early on, others are social mirrors in which infants contemplate and learn about themselves via imitation (Meltzoff, 1995) and the behavioral mirroring provided by caretakers who tend to feedback to the infant what they just did. Adult mirroring of the infant contains rich information about the self, characterized by systematic exaggeration of infants' emotions and precise marking of such mimicking by the adult (Gergely & Watson, 1999). In short, there is now good evidence for the early development of an implicit sense of self as *social agent*, reciprocating with people in systematic ways and developing social expectations (Rochat, Querido, & Striano, 1999; Rochat & Striano, 1999a; Striano & Rochat, 1999, 2000).

The abundance of findings supporting the existence of both an ecological and interpersonal self at the origin of development contrasts sharply with the theoretical assertions that have been traditionally put forth by developmentalists. Current research has radically changed the traditional view of an originally confused infant devoid of any implicit sense of self. Infants do not appear to start off in a state of fusion and confusion in regard to their situation in the environment. James (1890) famous account of the world of newborns as a "blooming, buzzing confusion" does not fit well with current infancy research.

In general, the view of an initial state of undifferentiation between the infant and the environment (e.g., Wallon, 1942/1970; Piaget, 1952; Mahler, Pine, & Bergman, 1975) needs to be revised in light of evidence of remarkable abilities in newborns for instru-

mental learning, social attunement, as well as differential responding to self and nonself stimulation (DeCasper & Fifer, 1980; Rochat & Hespos, 1997; Walton et al., 1992). What remains unclear, however, is how various kinds of implicit sense of self might develop to become explicit beyond infancy, when, for example, infants start explicitly to label and to recognize themselves in mirrors. If we accept Neisser's assertion of an implicit sense of the ecological and interpersonal self that would develop prior to language, questions remain as to how they develop and relate to each other. Do they develop independently? Does one precede the other? Do they need to be integrated for infants eventually to become explicit about themselves, such as through self-recognition in mirrors or starting to label themselves as *persons*?

Different Views on the Origins of Self-Knowledge

For some infancy researchers like Fogel (1993, 1995) or Lewis (1999), the implicit sense of self in infancy develops primarily through *relationships with others*. An implicit sense of the interpersonal self is viewed as central to infant psychological development and as having some developmental precedence over others. In the tradition of George Herbert Mead (1934), the emphasis is on an early sense of self molded into the adult state via social interaction (see also Meltzoff, 1995; chapter 11 this part).

Although focusing on the interpersonal world of infants, Stern (1985) proposes that infants in the first 2 months of their life develop an implicit sense of themselves that is somehow presocial, not yet based on reciprocation with others per se. For Stern, during the first 2 months of life, infants develop an implicit sense of what he calls the *emergent self*. The emergent self precedes the development of the *core self* corresponding to Neisser's interpersonal self (Neisser, 1991, 1995). In Stern's view, during the first 2 months, infants primarily experience their own behavioral organization in terms of fluctuating states, growing sensori-motor organization, and in terms of learning about the relations between various sensory experiences: simultaneous sounds and sights, smells and touch stimulation, proprioceptive and visual sensations. The sense of an emergent self would correspond to both a sense of the process and of the product of growing intermodal and sensori-motor integration (Stern, 1985, p. 45). As a by-product of early sensori-motor learning and experience, the sense of an emergent self would be primary, developing in relative independence of social interactions.

Between 2 and 6 months, when infants start to reciprocate with people and view others as differentiated entities with distinct histories, Stern proposes that infants then develop the sense of a *core self* that is interpersonal, based on the relationship with others as emphasized by Fogel (1993). Once again, in Stern's view, there is a developmental precedence of a sense of self as a functioning entity that feels, acts, and develops, over a sense of self (the core or interpersonal self) that is revealed to infants exclusively in social interactions.

Other infancy researchers emphasize the importance of an implicit sense of the self infants develop by interacting with their environment, without putting a particular emphasis on either physical or social objects (people). Eleanor J. Gibson (1988, 1995)