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SELF-CONSCIOUSNESS AND THE ORIGINS OF AN ETHICAL STANCE

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In this chapter, I discuss self-consciousness as a unique feature of our species. As a student of early childhood, my goal is to provide some developmental light on the origins and consequences of this feature that arguably shapes human experience. At the core of my argument is the idea that self-consciousness is inseparable from the human propensity to take an ethical stance toward others, but also toward the self in terms of reputation and the construction of a moral identity. I therefore consider the ontogenetic emergence of self-consciousness and its relation to the emergence of an ethical stance in children.

HUMAN PROSOCIAL PREDISPOSITIONS

Much comparative and developmental research demonstrates that humans have a propensity toward prosocial actions that might be unique among other animals. Our social life revolves around the perception of shared intentions leading to unique collaboration, cooperation, and helpful behaviors

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(Tomasello, 2008). Recent evidence shows that clear signs of such a propensity probably emerge by the 2nd year in human ontogeny (Hamann, Warneken, Greenberg, & Tomasello, 2011). In general, it is safe to say that humans are potentially more inclined to cooperate than any other primates. Yet, because other primate species and maybe other nonprimate animals (e.g., elephants) also show signs of cooperation and other prosocial behaviors, the theoretical debate continues to be lively, and divergences on the issue persist. However, it is hard to argue against the fact that human cooperation is linked to particularly exacerbated proclivities that are spontaneously expressed and correspond to what amount to strong and sophisticated prosocial predispositions, including other-regarding preferences, collaboration, and behaviors that are driven by a concern for the welfare of others.

If the evolutionary roots of humans' "unique" prosocial predispositions remain largely unknown, their developmental origins and the way such predispositions might emerge in ontogeny can be captured empirically and therefore provide a better ground for theoretical speculations. Here I want to treat and further speculate on the question of the origins of such predispositions in development.

The background intuition guiding my speculation is that if humans are a uniquely self-conscious species, this uniqueness translates into a unique care for reputation. We are indeed a self-conscious species that has the particular proclivity to care about reputation. The questions are, how do such specifically human prosocial proclivities (e.g., exacerbated care for reputation, self-consciousness, explicit moral sense) emerge in development, and how do they eventually determine our strong sense of what is right and what is wrong and provide the foundation of a unique sense of explicit justice (rules, norms, and regulations)?

Humans are indeed the only species that has evolved institutions or codes of law governing social affairs, particularly those pertaining to possessions, retribution, and the rightful distribution of resources. I suggest that human moral and prosocial ways, and hence also the inverse (human anti-moral and antisocial ways), rest primarily on the capacity (or lack thereof) for *self-consciousness*: the ability to represent the self as represented and evaluated by others. I will show that this unique ability emerges from approximately the middle of the 2nd year. In this chapter, I try to give readers a sense of its emergence, its roots, and its development in the first 3 to 5 years of life.

HUMAN SELF-CONSCIOUSNESS

Unlike any other species, humans care about their public appearance, and we are the only species that spends energy and effort adorning ourselves with makeup and other beautifying accessories. But such effort is not only

geared toward surface appearance and mere social seduction or conquest; it is also about *reputation*, or the calculation of how others construe us in terms of enduring qualities such as intelligence, power, wealth, charm, attractiveness, or moral integrity. Etymologically, the word *reputation* derives from the Latin verb *putare*, to compute or calculate. As humans, we work hard on appearance to signal deeper qualities regarding who we are as persons.

Overall, in human affairs, we gauge the incomparable secure feeling of social affiliation or closeness or the fragile sense of belonging to a social niche by having agency and a place among others. In general, we gauge our social affiliation via the attention, respect, and admiration of others—namely, our “good” reputation. In human affairs, the equation is simple: good reputation = good affiliation. The struggle for recognition and the maintenance of a good reputation shape the development of human social cognition. It is a major drive behind it (see Rochat, 2009).

CARDINAL IMPORTANCE OF OTHERS' GAZE

In the human struggle for recognition, the gaze of others gains, figuratively and literally, a particular status (Rochat, in press). In comparison with other primates, humans evolved a new function and meaning of others' gaze as a social signal, the main marker of intimacy and affiliation (Emery, 2000). Humans are uniquely endowed with eyes that have a clear sclera with a highly contrasted pupil, enhancing directionality and dispositional cues including the relative attention and engagement of others toward the self. This is evident, for example, in the particularly marked tendency toward gaze grooming in humans, a sign of affiliation and relational intimacy not found in other primate species, with maybe the exception of bonobo chimpanzees (Kobayashi, & Hashiya, 2011; Kobayashi & Kohshima, 1997).

EVOLUTIONARY CONTEXT

Compared with other primate species, humans are born both precociously (too soon) and highly *altricial* (dependent on others to survive; see Gould, 1977). This state is due to a combination of the proportionally larger brain we evolved as a species, together with the narrowing of the female's birth canal associated with bipedal locomotion, a posture uniquely evolved by our species and linked to protracted external gestation (Konner, 2010; Montagu, 1961; Trevathan, 1987). We start standing and roaming the world on our own by only 12 months, and it takes many, many long childhood years to separate from one's own original nurturing niche to become autonomous in order to reproduce this cycle of development with new progenies.

The premature human birth leads to a state of protracted dependence during approximately one fifth of our life. This remarkable dependence shapes our psychology from the outset. It is a simple, straightforward fact, yet it is probably the major determinant of what makes us psychologically unique in the animal kingdom: the self-conscious and ethical species we are. This basic evolutionary context leads to specific developmental problems.

HUMAN EXISTENTIAL CONUNDRUM

The prolonged immaturity and dependence that characterize human childhood also give rise to the unique existential conundrum: maintaining proximity with those dispensing the indispensable care while responding to the insatiable curiosity instinct that pushes all healthy infants to roam and explore the world. The problem is that this instinct pushes the child away from the secure base of the mother that he or she needs. All healthy children are faced with this basic conundrum from around 8 months of age on average—the typical onset of *independent locomotion*, operationally defined as the child's ability to creep or crawl a distance of 4 feet in 1 minute (Benson, 1993; Bertenthal & Campos, 1990). Coincidentally, it is also at this precise juncture in development that infants are known to show signs of strangers' presence and separation anxiety (the 8th-month "anguish" described by Spitz, 1965). More intriguing is the fact that it is also at this exact developmental juncture that infants begin to engage in *joint attention* with others—that is, secondary intersubjectivity or explicit triangulation between self and others in relation to objects in the world (Scaife & Bruner, 1975; Tomasello, 1995; Trevarthen, 1980).

One way to look at the developmental emergence of joint attention and secondary intersubjective triangulation is that children are pushed by the drive to engage others in their object exploration, checking back and forth whether the gaze of others is attuned to and aligned with their own object of interest. In this view, joint attention is the basic process by which children can resolve the basic human conundrum. In joint attention, children manage de facto to incorporate others (whom they need for their own survival and to whom they are opportunistically attached) into their own free roaming and object exploration. Stated differently, with joint attention, children begin to control others' attention onto the self from a distance. Via the control of others' gaze oriented toward the self, young children manage to maintain psychological proximity, but at a distance. It allows them to be physically separated while continuing to be recognized and enjoying others' undivided attention (the "alone but together" or "together alone" conundrum). Via joint attention, children thus gain "telecontrol" (control at a distance) of

others' attention toward the self. In this development, the gaze of others now conveys new, evaluative meanings about the self. It leads children to become increasingly *self-conscious*: explicitly aware of the self through the valued and evaluative eyes of others. I also suggest that this could represent the ontogenetic root of the human moral sense: the proclivity to be principled and take an ethical stance toward others.

SELF-CONSCIOUSNESS IN DEVELOPMENT

For decades now, the mirror mark test has been used as an acid test of conceptualized self-awareness from both a developmental and a comparative perspective (Amsterdam, 1968, 1972; Gallup, 1970). Self-directed behaviors toward a mark surreptitiously put on the face and discovered in the mirror attest to *self-concept*—in other words, an objectified sense of the self (see also Mitchell, 1993, for more nuanced views on the mirror mark test). What the individual sees in the mirror is “me,” not another person, a feat that is not unique to humans because chimpanzees, orangutans, dolphins (Parker, Mitchell, & Boccia, 1995), and now magpies as well as elephants have also been reported to pass the test (Plotnik & de Waal, 2006; Prior, Schwarz, & Güntürkün, 2008).

The majority of children pass the mirror mark test by 21 months, touching the mark on their face rather than the mirror, thus indicating that the perceived specular image is self-referred (Bertenthal & Fisher, 1978). Note, however, that the onset and manifestation of such behavior in front of the mirror depends on culture (Broesch, Callaghan, Henrich, Murphy, & Rochat, 2011). But beyond the mirror mark test and what its passing might actually mean in terms of emerging self-concept, there is an early and universal reaction to mirrors that, in my view, is most revealing of human psychology. This reaction is the typical expression of an apparent uneasiness and social discomfort associated with *mirror self-experience*. The same is true for seeing photographs of oneself or hearing a recording of one's own voice. Across cultures, mirror self-experience is uncanny, an expression of deep puzzlement. This is evident even in adults who grew up with no mirrors and who manifest “terror” when confronted for the first time with their own specular image (see Carpenter, 1976). Looking at the self in a mirror puts people, young and old, in some sort of arrested attention and puzzlement. Mirror self-experience is indeed an uncanny experience (Rochat & Zahavi, 2011).

In general, aside from the landmark passing by a majority of children of the mirror mark test from around the second birthday, mirror self-experience develops to become incrementally troubling and unsettling for the healthy child. Such a development is not observed in young autistic children, who are

impaired in their reading of others' mind (Baron-Cohen, 1995) but pass the mirror mark test (Neuman & Hill, 1978). Autistic children remove the mark from their faces when they perceive it but do not show the signs of coyness and embarrassment—the troubled or unsettling reactions that are so typical of nonautistic children when discovering themselves in the mirror with a mark on their face (Hobson, 2002, p. 89). It appears that for autistic children, there is a different meaning attached to the mark they discover on their faces that they eventually touch and remove. This meaning would not entail the same kind of self-evaluation or self-critical stance in reference to the evaluative gaze of others expressed in typical children via self-conscious emotions. Autistic children's passing of the mirror test is not self-consciousness proper and does not appear to entail any sense of reputation as defined earlier.

In her pioneering research examining children's reactions to mirrors and establishing (in parallel with Gallup, 1970) the mirror mark test, Amsterdam (1968, 1972) described four main developmental periods unfolding between 3 and 24 months of age:

1. The first period is of mainly sociable behaviors toward the specular image. Infants between 3 and 12 months tend to treat their own image as a playmate.
2. A second period is accounted for by the end of the 1st year; infants appear to show enhanced curiosity regarding the nature of the specular image, touching the mirror or looking behind it.
3. By 13 months, a third period starts in which infants show a marked increase in withdrawal behaviors, with the infant crying and hiding from or avoiding looking at the mirror.
4. Finally, Amsterdam accounted for a fourth period starting at around 14 months but peaking by 20 months in which the majority of tested children demonstrated embarrassment and coy glances toward the specular image, as well as clowning.

These changes index the self-reflective and ultimately the unique self-conscious psychology unfolding in human ontogeny. Such psychology is the product of a complex interplay of cognitive and affective progress that takes place during this early period of child development (Amsterdam & Levitt, 1980), something that Darwin already inferred observing his own child long before the recent wave of experimental work around the mirror mark test.

In his book *The Expression of the Emotions in Man and Animals*, Darwin (1872/1965) described being struck by the unique and selective human crimsoning of the face, a region of the body that is most conspicuous to others. He wrote, "Blushing is the most peculiar and the most human of all expressions" (p. 309). Observing blushing in his son from approximately 3 years of age,

and not before, Darwin highlighted the mental states that seem to induce human blushing:

It is not the simple act of reflecting on our own appearance, but the thinking what others think of us, which excites a blush. In absolute solitude the most sensitive person would be quite indifferent about his appearance. We feel blame or disapprobation more acutely than approbation; and consequently depreciatory remarks or ridicule, whether of our appearance or conduct, causes us to blush much more readily than does praise. (p. 325)

These observations capture something fundamental and distinctive about humans, a unique motivation behind their social cognition: the exacerbated quest for approbation and affiliation with others and the unmatched fear of being rejected by others (see Rochat, 2009).

The expression of embarrassment in front of mirrors by 2- to 3-year-olds is associated with the child's growing metacognitive abilities, in particular, the child's growing ability to hold multiple representations and perspectives on the same thing, including the self. For the child, the recognition of the self in the mirror is also the recognition of how the self is publicly perceived. When recognizing themselves in the mirror and discovering that they have a mark on their face, children tend to touch the mark but will leave the mark if they notice that other people around them also wear the same mark. Such observations show that from 20 months on, passing the mirror mark test seems to be inseparable from social awareness. From the outset, when children pass the test, research shows that they do so with the norm of others in mind (Rochat, Broesch, & Jayne, in press).

From the point of view of neurophysiology, there is an apparent link between the emergence of metacognitive abilities around 2 to 3 years of age and the documented orderly maturation of the rostrolateral region of the prefrontal cortex. The growth of this prefrontal cortical region would correlate with the development of new levels of consciousness, in particular, the transition from minimal to metacognitive levels of self-consciousness (Bunge & Zelazo, 2006; Zelazo, Gao, & Todd, 2007).

Elsewhere (Rochat, 2009), I interpreted the negative affective connotation of mirror self-experience (e.g., embarrassment and self-conscious emotions as opposed to positive jubilation) as the expression of a universal tendency to hold an overestimated representation about the self that is at odds with what is actually seen by others, the latter "truly" revealed in the mirror. The first-person (private) perspective on the self is generally overestimated compared with the third-person (public) perspective. This interpretation is supported by the well-documented illusory superiority phenomenon found in adults (Ames & Kammrath, 2004; Beer & Hughes, 2010; Hoorens, 1993). I

speculated that mirrors would bring about the experience of a generalized gap between private (first-person) and public (third-person) self-representations, a gap that is the source of basic psychic tension and anxiety, the expression of a generalized social phobia and universal syndrome expressed from the age of 2 to 3 years (Rochat, 2009).

An alternative interpretation would be that young children shy away from their reflection in the mirror not because they are self-conscious but because they wrongly construe the presence of another child staring at them with a persistent, still face as something to be avoided. But this is doubtful considering, as we have noted, that very early on infants discriminate between seeing themselves and seeing someone else in a video (Bahrick, Moss, & Fadil, 1996; Rochat & Striano, 2002).

By showing embarrassment and other so-called secondary emotions (Lewis, 1992), young children demonstrate a propensity toward an evaluation of the self in relation to the social world (the “looking glass self” first proposed by Cooley in his 1902 book). They begin to have others in mind, existing *through* in addition to *with* others.

Children begin to express secondary emotions such as shame or pride by 2 to 3 years in parallel with, and probably linked to, the emergence of symbolic and pretend play. Such play entails, if not at the beginning but by at least ages 3 to 4 years, some ability to simulate events and roles and to take and elaborate on the perspective of others (Harris, 1991; Striano, Tomasello, & Rochat, 2001; Tomasello, 1999; Tomasello, Striano, & Rochat, 1999).

The process of imagining what others might perceive or judge about the self, whether this imagination is implicitly or explicitly expressed, is linked to the cognitive ability of running a simulation of others’ minds as they encounter the self. There are fantasies and phantasms involved, the stuff that feeds the self-conscious mind and characterizes a metacognitive level of self-awareness (i.e., the construal and projection of what others might see and evaluate in us).

POSSESSION AND SELF-CONSCIOUSNESS IN DEVELOPMENT

By 21 months, children’s mouths are full of personal pronouns and adjectives like *I*, *me*, and *mine* (Bates, 1990; Tomasello, 1998). Not only do children recognize themselves in mirrors as the author of their own actions (objectified self-agency), but they also begin to recognize themselves as the proprietor of particular things. By the end of the 2nd year, children become explicit about what belongs to the self and, de facto, to nobody else (the explicit ownership stance). When the child begins to claim, “that is mine!” it is also to say, “that is not yours!” and not just to bring attention to the object or just the forceful

ostentation of a request for it (Tomasello, 1998). The first claim of possession is an assertion of power over objects in relation to others. It is an ostentatious act of self-incorporation whereby the *mine* (the object of possession) becomes *me*, henceforth giving it solidity, as suggested years ago by John Dewey (1922).

The claim of possession emerging by 21 months does indeed give solidity to the embodied self in relation to others. It is primarily an expression of social self-assertiveness (Rochat, 2009, 2011), being first and foremost self-elevating and self-magnifying in relation to others. There is an absolutist connotation in the first identification of young children with objects and their forceful claims as proprietor, a typical trait of the “terrible 2s.” In stating “it is *mine*,” children are saying that it is nobody else’s, that it is absolutely nonalienable. But this first inclination changes rapidly in the context of social exchanges and reciprocation. Learning to live with others (i.e., the process of socialization) appears to constrain young children to realize that there are advantages in terms of gains in social power and ascendance over others in becoming more reciprocal by letting go of exclusive possessions through bartering transactions and giving and receiving in social exchanges (Rochat, 2011).

EMERGENCE OF AN ETHICAL STANCE

By 2 to 3 years of age, children eventually learn the central notion that objects that are possessed by the self do not have to be exclusive and nonalienable but can also be alienable, brought into a space of exchange governed by principles of fairness and reciprocity. Research on sharing in children from various cultures and socioeconomic backgrounds has shown that this development appears to occur universally between 3 and 5 years of age (see Rochat et al., 2009), despite the well-documented variability in children’s developmental niche and sociocultural circumstances (Whiting, 1963; Whiting & Edwards, 1988). The degree of young children’s fairness in sharing (i.e., the relative equitable distribution of valuable resources using a dictator game paradigm with children as either recipients or not recipients of the exchange) does vary across cultures, but there is a tendency to become more equitable and avert inequity as a function of age in children regardless of culture (Rochat et al., 2009).

The notion of possession, from being primarily a claim of unalienability and self-edification (by the end of the 2nd year and in parallel with the development of self-consciousness, as discussed previously), becomes alienable or shareable. From this point on, children discover the social power of property in the context of exchanges (Faigenbaum, 2005). Even if they

show an original trend for self-maximizing gains, consistent with an absolutist unalienable sense of property, research shows that from 36 months on, children begin to develop a complex sense of equity and fairness in sharing, developing a sense of justice that tends to favor protagonists on the basis of ethical principles (e.g., first possession principle, Friedman & Neary, 2008; relative wealth, Rochat, 2009).

During the preschool years (3–5 years old), children develop the ability to apply rules of equity in sharing desirable goods with others, particularly ingroup others, overriding the strong self-maximizing propensities (i.e., self-assertiveness in relation to others) that prevail in 2-year-olds. Preschoolers develop an ethical stance in relation to possession, a notion now defined by its alienability in the context of balanced social exchanges increasingly guided by principles of reciprocity and aversion to inequality, the basic ingredients of human sociality (Fehr, Bernhard, & Rockenbach, 2008; Olson & Spelke, 2008; Rochat, 2009). By 5 years of age, for example, North American middle-class children develop the principled propensity to share equitably and to enforce equity by punishing other, nonabiding protagonists, even if it is at their own cost (i.e., costly punishment; see Robbins & Rochat, 2011). There are indeed emerging signs of strong and principled reciprocity between 3 and 5 years of age, with some evidence of cross-cultural variations, however, that need further empirical scrutiny (Robbins & Rochat, 2011).

Reciprocity requires a concept of self that is enduring in a moral space made of consensual values and norms, a space in which the child becomes accountable and in which reputation starts to play a central role. Self-consciousness, in particular, the valued (ethical) sense of self in relation to others, does appear to develop in parallel to the early development of reciprocal exchanges, although much more empirical work is needed to document this developmental link (Rochat, 2009). Changes in self-concept, in an objectified sense of the embodied self, would accompany the development of reciprocal exchanges and presumably an alienable sense of possession in development. Reciprocal exchanges constrain children to project themselves, as well as what they perceive of others, in the context of ongoing social transactions. Exchanges based on reciprocation require that the protagonists keep track of and agree on who owns what and when at all times. Engaging in such exchanges, starting at approximately 3 years of age (preschool age), forces children to objectify themselves as embodied entities not only in the here and now of perception and action but also in past and future social situations (Povinelli, 2001). There is an intriguing synchronicity between the developmental emergence of the notion of alienable possession brought into a space of reciprocal exchanges with others and the notion of an embodied, physical self that is permanent and enduring over time. Much more research is needed to document this synchrony, in particular, the mechanisms of

cross-fertilization and mutual determination of the *me* (objectified sense of the embodied self) and of the *mine* (objectified sense of what belongs to the embodied self) starting at 2 years of age.

CONCLUSION

In this chapter, I have presented what I view as cardinal features of human development: the emergence of self-consciousness and the putative origins of an ethical stance toward others that would be the foundation of unique human potentials for collaboration, cooperation, and other-regarding attitudes. Such ethical or prosocial attitudes are explicitly manifested from at least 5 years of age, with precursor signs already evident by the 2nd year (see Tomasello, 2008). I have tried to show that the development of an ethical stance in children is inseparable from the development of an objectified sense of the self as perceived and evaluated by others (i.e., self-consciousness). This development parallels developmental changes in the meaning of others' gaze that infants learn to use and coopt to explore the world independently while maintaining contact with others, controlling others' attention onto the self at a distance, and mobilizing others into their own activities. I have suggested that this developmental script could represent the seminal context and fertile soil for self-consciousness to develop: the objectified sense of self as perceived, attended, and ultimately evaluated by others. It is a context that favors the particular care about reputation, literally the accounting of others' evaluative gaze onto the self (reputation = computing, etymologically).

I also have tried to show that as self-consciousness becomes increasingly evident in children, equally evident is children's inclination to claim possession over physical objects in the environment. From being in essence unalienable possession at first, children quickly learn that there are great social advantages in bringing such possessions into a zone of exchange with others (Rochat, 2011). It is in this developmental transition that children learn the social advantages of exchanging properties that are alienable and are constrained to learn about what is fair and what is not. This is a crucial developmental gain that I tried to account for in its putative origins.

As emphasized by the philosopher Charles Taylor (1989),

being a self is inseparable from existing in a space of moral issues, to do with identity and how one ought to be. It is being able to find one's standpoint in this space, being able to occupy a perspective in it. (p. 112)

Much more empirical research is needed to further specify the mechanisms by which children develop their own compass to navigate the moral space that is, in many ways, unique to humans.

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