

Wolfgang Mack / Gerson Reuter (eds.)
Social Roots of Self-Consciousness
Psychological and Philosophical Contributions

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Social Roots of Self-Consciousness

Psychological and Philosophical Contributions

Edited by

Wolfgang Mack and Gerson Reuter



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Preface

Being self-conscious in the sense of being able to think about ourselves – especially about our own mental life – certainly is one of our most remarkable and most important cognitive abilities. Due to being self-conscious we are able to stand back from our daily concerns and routines, reflecting on our actions, evaluating our projects, and trying to correct shortcomings to improve our way of life. Self-consciousness underlies a great deal of our cultural and social life, it is an enabling condition of much we appreciate and do not want to – and probably cannot – live without. Therefore, studying the nature and ontogeny of self-consciousness should be one of the central subjects of psychological and philosophical research.

Investigating self-consciousness is no easy task and poses a vast amount of knotty questions and intractable problems, however. What should an adequate theoretical analysis of self-consciousness look like? Which isolable and possibly simpler capacities compose this central ability? Moreover, in which way do infants develop self-consciousness and closely related abilities? In the process of investigating self-consciousness, conceptual and empirical questions are intimately linked. Consequently, progress in answering questions concerning the nature and ontogenetic development of self-consciousness requires a co-operation of psychology and philosophy. For this reason, this volume collects essays from these two fields.

Trivially, most of us – members of the biological kind *Homo Sapiens* – have acquired (or are in the process of acquiring) self-consciousness, understood as the ability to be conscious of having thoughts (or representations) about oneself, at some time or other. But when precisely does self-consciousness in infants appear for the first time? Unfortunately, answering this question depends – among other things – on answering the question of how to analyse the concept of self-consciousness. Of course, we definitely do possess self-consciousness when we have acquired the linguistic skills required for expressing sentences like “I know that I am tired” or “I think I have missed the point”. In such cases, we not only ascribe a specific property to ourselves, we also know (or believe) that we are ascribing this property to ourselves. However, does self-consciousness really presuppose mastering the relevant parts of a natural language, or are there prelinguistic kinds of self-consciousness? This is claimed by various scientists, especially (but not exclusively) by developmental psychologists. Infants are frequently described as having a ‘sense’ of themselves as actors or as having a ‘sense’ of their body as their own body, for example. And indeed, there seems to be overwhelming evidence for the claim that infants are in some way conscious of themselves prior to possessing the relevant linguistic skills. Many experiments indicate that the behavior of infants is already sophisticated to an extent that presupposing the presence of self-consciousness is explanatorily adequate or even indispensable. Certainly, these cognitive achievements of infants do not amount to being instances of ‘full-blown’ self-consciousness, but they may mark prestages of a sophisticated form of self-consciousness and therefore deserve to be called instances of a rudimentary form of self-consciousness.

Of course, the assumption that infants manifest prelinguistic forms of self-consciousness is not uncontroversial. Within developmental psychology, authors extensively debate the

question of how complex and demanding the description of the cognitive abilities of infants should be. Obviously, since the question of how to describe the cognitive capacities of infants is partly a conceptual question, philosophical work needs to be done.¹ And this conceptual task is a challenging project. Although every adult was an infant once, it seems that no one really knows “what is it like to be a human infant”. Infant research cannot simply make use of the perspective of an infant. The large corpus of sophisticated observations on infant behavior draws inevitably on our adult conceptual scheme, on the way we use mental vocabulary in interpreting each other and ourselves. Therefore, empirical and conceptual research into the nature and ontogeny of self-consciousness should not only act jointly, but should also be accompanied by a critical reflection of the applied methods and core concepts.

In order to keep track of the development of self-consciousness in infancy, one has to take into account a multiplicity of factors. Important factors are, of course, other cognitive and behavioral capacities of infants like perception, agency, and pretend-play – to name but a few. Obviously, drawing a picture of the mental life of infants as comprehensively as possible helps to shed light on the development of self-consciousness. Of equal importance, however, is the social context infants live in. Certainly, infants decisively benefit from interacting with other persons, especially their caregivers and – as the case may be – their siblings. Therefore, it is no wonder that many psychologists as well as philosophers agree that social interactions are explanatorily relevant for a theory of the nature and ontogeny of self-consciousness. However, it definitely is still open to dispute exactly which ‘parts’ of the process of acquiring self-consciousness and related capacities social contexts can help to explain. Are specific social contexts really necessary for developing self-consciousness or do they only have the contingent function of triggering prewired processes? Hence, the challenge consists in pinpointing what kinds of social factors are responsible for what kinds of changes in the mental life of infants.

The questions raised by assuming a ‘social nature’ and ‘social roots’ of self-consciousness rightly have come to the fore in recent years. For this reason, this volume particularly focuses on the role of social contexts in the development of self-consciousness and closely related abilities. Of course, investigating the development and nature of self-consciousness is a monumental project; and most likely, psychology and philosophy are in this regard still at its beginning. But hopefully, the essays collected in this volume will shed light on at least some of the notoriously difficult but fascinating problems posed by the challenge of investigating self-consciousness.

Hannes Rakoczy investigates the ontogeny of different forms and levels of intentionality and self-consciousness from the perspective of comparative and developmental psychology. Assuming that different forms of intentionality are linked with different forms of self-consciousness, he basically argues for two claims. Firstly, he presents evidence for the thesis that both human infants and members of other species develop simple forms of intentionality, thereby acquiring a rudimentary consciousness of themselves. Secondly, he shows that

¹ Of course, this is not to say that such conceptual work is a prerogative of professional philosophers. Conceptual work simply is philosophical work – no matter who contemplates these questions.

only humans – from the second year of life on – develop collective (or ‘we’) intentionality and consequently a uniquely human form of self-consciousness. According to Rakoczy, this form of self-consciousness consists in being conscious of oneself as member of a group of rational agents and has to be characterized in normative terms.

Louise Röska-Hardy scrutinizes two variants of the claim that the self is socially constructed: Kenneth Gergen’s concept of the ‘relational self’ and Hubert Hermans’ concept of the ‘dialogical self’. Both authors put forward their accounts as advancements of ideas of the pragmatists William James and George Herbert Mead. Therefore, Röska-Hardy starts with presenting the theoretical cornerstones of the relevant pragmatists’ ideas, especially their rejection of the individualistic Cartesian picture of the self. Against this backdrop, she elaborates the details of the two ‘postmodern’ radicalizations of the pragmatists’ insights with a view to laying bare their deficiencies as an account of the social nature of the self.

When do children become consciously aware of events in the world? *Josef Perner and Zoltán Dienes* examine the prospects of answering this crucial question in view of current theoretical options and empirical data. Basically, they discuss five strategies for elaborating an answer. Three of these strategies concentrate on activities of children which are indicative of capacities typically regarded as sufficient conditions of conscious awareness in adults (e.g., verbal communication and explicit memory). The other two strategies focus on rudimentary forms of the ability to have higher-order thoughts about one’s own mental states (presented as a necessary condition of conscious awareness). They develop the merits and weak points of these strategies, thereby concentrating on different theoretical options for analysing the empirical findings so far. This discussion serves as a foil against which Perner and Dienes ultimately aim at a coherent outline of the development of conscious awareness which tentatively answers the opening question by the hypothesis that children become consciously aware between 12 and 15 months (± 3 months).

Frank Esken examines a core concept for a theory of consciousness and self-consciousness: the concept of a subjective perspective. Essentially, he discusses two different versions of this concept. According to a more demanding version, which can be placed in a tradition going back to Strawson and Kant, consciousness necessarily involves a self-reflexive element. In connection with this requirement, consciousness is considered as dependent on an understanding of what it means that there are things in an objective world existing independently of perceiving them. Arguably, having such a subjective perspective presupposes conceptually structured thoughts and the possession of a natural language. In contrast to this proposal, a far less demanding conception equates having a subjective perspective with the ability of intentionally doing something. This ability is ascribed even to animals lacking the faculty of speech. Esken argues for the claim that neither of these conceptions is adequate. Whereas the first version can be shown to be overly demanding (‘over-intellectualizing’), the second version does not provide the resources necessary for capturing the peculiarities of having a subjective perspective. Esken’s own proposal for analysing the concept of a subjective perspective mainly takes up considerations from psychology and neuroscience about executive functions and meta-cognitive capacities.

Claudia Thoermer and Hannah Eisenbeis survey empirical research of developmental psychology focussing on early social-cognitive development between 9 and 18 months of age. They start with discussing models of the development of an understanding of oneself

(‘the self’) and others put forward by György Gergely & John Watson and Philippe Rochat, which highlight the social nature of this kind of understanding. Against the backdrop of these proposals, Thoermer and Eisenbeis in the main part of their contribution examine recent studies of early action understanding drawn from different paradigms. These considerations aim at answering the question of whether such studies can contribute to theoretically understanding the infants’ development of preverbal forms of self-conceptualisation. According to Thoermer and Eisenbeis, these studies at least indicate such forms of self-conceptualisation. At the same time, it can be shown that these studies are definitely open to competing interpretations, thereby revealing the need for more systematic and methodologically refined research.

Gerson Reuter concentrates on a critical examination of a single theory, namely the ‘Social-Biofeedback Theory’ developed by György Gergely & John Watson. According to Gergely & Watson, infants at the age around 9 months develop the ability to refer to affect-states of themselves – such as disgust or basal forms of joy – exactly due to specific social contexts called ‘situations of affect-mirroring’. These social situations are primarily characterized by the infant’s mimic behavior expressive of her own affect and the caregiver’s mimic behavior that ‘mirrors’ the infant’s facial expression and thereby indicates the infant’s affect. The core explanatory claim states that infants use external indicators of this kind for forming representations referring to affects of oneself. Basically, Reuter sets about to answer the question of whether Gergely’s and Watson’s proposal is suited for explaining the onset of the ability of self-reference. He suspects that using their theory for such an explanatory task leads to an explanatory circle. This suspicion articulates the impression that the cognitive process of benefiting from the mirroring expressive behavior of caregivers in the required manner is dependent on the prior possession of the ability of self-reference.

Wolfgang Mack presents a selection of arguments from philosophy and empirical research on the development of intentional communication in infancy that underline the importance of the distinction between agency awareness and reflective self-consciousness. In agency, the senses and the motor system provide self-specifying information responsible for the development of an implicit ‘ecological self’ (Neisser), which is part of primary intersubjectivity and does not amount to reflective self-consciousness. In analyzing the subsequent steps of the process of learning intentional communication, Mack emphasises the transition from dyadic to triadic interactions and especially describes the role of imitation, gaze following, and pointing (joint attention). Finally, Mack considers the importance of linguistic competencies linked with reflective self-consciousness. He argues that prior to acquiring these competencies the abilities of infants only count as precursors of reflective self-consciousness. According to Mack, this form of self-consciousness is dependent on the socially anchored acquisition of the relevant parts of a natural language, particularly the competent use of “I”.

Albert Newen and Anika Fiebich develop an answer to the question to which extent ‘the self’ is constituted by social interactions. They first introduce a distinction between the self understood as a biological system having self-consciousness and the self-model defined as the representational content of a unity of instances of self-consciousness and make plain that the leading question concerns – and should concern – only the self-model. In the course of developing their answer, they distinguish different levels of self-consciousness and different

kinds of self-models. On this basis, they investigate to which extent a self-model is constituted by individual-cognitive properties (e.g., representations of space, time, and causality) and/or by social-cognitive properties (e.g., social learning and communication). Their core claim states that neither a pure concentration on the individual-cognitive properties (in the manner of Piaget, for example) nor a pure concentration on the social-cognitive properties (in the manner of Mead, for example) proves adequate. Instead, they suggest a developmental theory of self-models which incorporates both dimensions and their interplay. In particular, they argue that there is a shift of dominance in the constitutive elements of a self-model from individual-cognitive to social-cognitive abilities during the first four years of life, indicating that a full-blown self-model essentially relies on social-cognitive abilities.

Werner Deutsch investigates the first steps in acquiring linguistic means of referring to oneself, especially the early use of the expression “I”. The analysis is based on extended diary notes by William and Clara Stern concerning the development of their three children. He particularly focuses on the relationship between linguistic form (mainly nominal vs. pronominal) and its function for the speaker (descriptive vs. volitional). Deutsch mainly argues for the claim that children do not passively adopt standards of linguistic usage; rather the children’s usage of “I” can be shown to have its own ‘logic’. For example, a large part of the early usage of “I” is context restricted in the sense of being used for expressing the want to control a specific situation. At this time, children do not understand the point of the adult’s usage of “I”. In particular, they do not understand the relation between the socially established meanings of “you” and “I”, thereby failing to grasp that someone using “I” can be addressed by another speaker with the help of “you”. Only gradually their use conforms to the conventions of a shared language.

Most of the essays trace back to material presented at the workshop “Soziale Wurzeln des Selbst und des Selbstbewusstseins – psychologische und philosophische Beiträge” at the J.W. Goethe-University in Frankfurt am Main/Germany (November, 9-10, 2007). The workshop took place in the context of the Collaborative Research Center “The Culture of Knowledge and Social Change” at the J.W. Goethe-University in Frankfurt am Main funded by the German Research Foundation (DFG). The editors express their gratitude to the DFG for the longstanding support. Special thanks we owe to Sebastian Esch for his expertise in assisting with the manuscript.

Wolfgang Mack and Gerson Reuter, Frankfurt, 2009

Kinds of selves: A comparative view on the development of intentionality and self-consciousness**

Intentionality and the self are correlative phenomena: All intentionality is someone's (pertains to some 'self', as some philosopher might want to say); and every one (every 'self', as the same philosophers might wish to continue) is essentially a bearer of intentional attitudes. Different forms of intentionality should thus constitute different forms of selfhood and self-consciousness.

In this chapter, I will review the ontogeny of different forms and levels of intentionality from the perspective of comparative and developmental psychology and discuss the potential implications of these forms of intentionality for the formation of self-consciousness.

To foreshadow the main arguments: human infants and many other species develop in parallel with regard to simple individual intentionality and even regarding some simple individual intentionality of second order: These forms of intentionality constitute a rudimentary consciousness of oneself as an object among many and even in psychological terms as a subject among others. What is uniquely human, however, is the development of collective (or "we") intentionality from the second year of life. Such we-intentionality constitutes uniquely human forms of self-consciousness – consciousness of oneself as "one of us", as a member of a group of rational agents.

Individual intentionality

Intentionality, in the broad philosophical sense of 'aboutness', is the mark of the mental (Brentano, 1973; Dennett & Haugeland, 1987; Searle, 1983). To be capable of mentality means to be able to enter into intentional, contentful attitudes towards the world and to be guided by these in reasoning and rational action. Paradigmatic intentional attitudes are believing, perceiving, knowing (that something is the case), desiring something to be the case and intending to do some act. In theoretical reasoning, perceptions and beliefs justify other inferential beliefs (e.g., the belief "that p" and the belief "if p then q" together license the belief "that q"). In practical reasoning, desires rationalize other desires, intentions and acts (e.g., the desire "that p" and the belief "act A brings it about that p" together license the intention to do A).

Simple forms of intentionality develop in parallel ways early in human ontogeny and in many other species. Let me mention just two areas that are highly relevant from a devel-

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** The present chapter draws heavily on previous work, in particular on a paper called "Collective Intentionality and the Roots of Human Societal Life" in *Learning from animals?* (edited by Louise Röska-Hardy & Eva M. Neumann-Held).

opmental psychological perspective, namely object cognition and planned action. In developmental research since Piaget's (1952) seminal work, thinking about an objective world – in its simplest form: thinking about objects existing as ‘out there’ – and acting intentionally and in planned ways have been stressed as the two major milestones in the transition from purely sensorimotor dealings with the world to intentionality proper. All thinking requires a minimal notion of objectivity: The objects thought about exist independently from the perceiver and enduringly out there in the world. And arguably, all thinking starts from a notion of objects, individuals of certain kinds existing continuously in space and time whether perceived or not (e.g., Strawson, 1959). Regarding human ontogeny, Piaget has described infants' development from initial undifferentiated sensation without any notion of persisting objects (“out of sight, out of mind”) to what he called “object permanence” – the appreciation that objects continue existing objectively whether perceived or not. In their actions, Piaget and much subsequent research found, infants begin to display object permanence from (at latest) the end of their first year: They begin to search for occluded and hidden objects they previously perceived (with implicit looking time measures, analogous competence can be found even much earlier, see Baillargeon, 1987). Furthermore, infants from around 1 year do not only track objects as chunks of matter continuously existing in space and time; they furthermore individuate objects as objects of certain kinds (e.g., this chair, that table, that rabbit ...): Recent studies found that when 1-year-olds see an X going into a box, then see a Y coming out of the box (with no purely spatio-temporal cues to decide how many objects there were, as the two objects were never seen simultaneously) and re-entering the box, and finally find only an X (or only a Y) in the box, they are surprised and continue searching (e.g., van de Walle, Carey & Prevor, 2000; Xu & Carey, 1996; Xu & Baker, 2005). A rich interpretation of these findings is that by one year of age, infants begin to apply our common sense metaphysical framework of objects as enduring substances individuated under sortal (kind) concepts (Xu & Carey, 1996) – and thus share the rudiments of our adult conceptual architecture of objective thought.

And many other animals are on a par with the infants: Many primate species, and dogs, for example, reach the highest levels of Piagetian object permanence, levels typically reached by infants in the second year (for an overview, see Tomasello & Call, 1997). Furthermore, recent research suggests that some monkeys and great apes individuate objects qua objects of certain kinds much in the same ways as human 1-year-olds do (Mendes, Rakoczy & Call, 2008; Phillips & Santos, 2007; Santos et al., 2002).

Correlatively with awareness of individuals persisting in space and time even when unperceived, another prerequisite for objective thought is some rudimentary awareness of oneself as an object in space (Strawson, 1959). Again we have very clear criteria in speaking creatures (use of personal pronouns, etc.), but what could count as a pre-/non-verbal indicator of some such rudimentary awareness in non-linguistic animals? The non-linguistic task that came standardly to be used in developmental and comparative psychology is the so-called “mirror rouge” task (Amsterdam, 1972; Gallup, 1970). A mark of rouge is surreptitiously applied to the infant's/animal's forehead (infants are distracted, animals often narcotised), and then the subject is placed in front of a mirror. Touching one's own face to remove the mark is interpreted as an indicator of some rudimentary awareness of oneself as an object in space (the “Me” sensu, James (1890) and Mead

(1934)). While younger infants and most other species, including monkeys, consistently fail the task (they treat the mirror image like a conspecific), infants from around 18 months begin to master this task, and great apes have been shown to succeed (see Tomasello & Call, 1997, for an overview).¹

The second crucial milestone in the development of intentionality in human ontogeny stressed by Piaget is the emergence of intentional, planned action. While much behaviour may be voluntary right from the start, the first clear instances of intentional instrumental action, that is, actions done purposefully and in a planned way in order to achieve some end held in mind, appears in human ontogeny towards the end of the first year: Infants organize their behaviour in means-ends structures and indicate an awareness of the relations between means and ends. In a classic example, infants remove barriers in order to reach a desired object or pull a cloth towards themselves on which the desired object is placed in order to be able to grasp it. And they will persist until the end is fulfilled, varying their means if necessary (Piaget, 1952; Willatts, 1985, 1999). Again, these phenomena are widespread also in the non-human animal kingdom: Many species, notably primates, show instrumental problem-solving of remarkable complexity – Köhler’s apes perhaps being the most famous examples.

In sum, thus, many animals share with us the bare bones of simple individual intentionality.² Like human infants from around 1, many animals are capable of the most basic form of objective thought: perceiving and cognizing about objects. Great apes (and perhaps some other species) even share with human infants some awareness of themselves as objects among many. And many animals don’t just behave, but perform intentional instrumental acts in planned ways (not to mention the remarkable cognitive abilities recent research has found in many species in such areas as causal reasoning, tools use, memory, simple numerical cognition, etc).

Individual intentionality of second order

Individual intentionality as such thus seems to be common to humans and many other animals. But what about intentionality of second order? Much comparative research in the past three decades has focused on such higher-order intentionality – on the ability to understand others and oneself *qua* intentional beings (also often called “theory of mind” after Premack’s & Woodruff’s (1978) seminal paper “Does the chimpanzee have a theory of mind?”). After Premack’s and Woodruff’s article, so-called “theory of mind” research became a booming field in developmental and comparative psychology, with joint efforts of philosophers and psychologists to find suitable operationalizations of second-order intentionality (e.g., Bennett, 1978; Dennett, 1978; Harman, 1978; Wimmer & Perner, 1983). What emerged as the agreed upon milestone for full-fledged second-order intentionality

1 Perhaps dolphins and elephants are capable of mastering the task as well, as some recent (though difficult to interpret) studies suggest (Reiss et al., 2001; Plotnik et al., 2006).

2 I am speaking of “simple” intentionality here, as arguably many forms of full-fledged human individual intentionality are essentially dependent on language, a point I will return to later (see also Bermúdez, 2003, for a proposed taxonomy of simple non-linguistic intentionality in contrast to linguistically mediated intentionality).

was the ability to ascribe to others (and oneself in the past) epistemic subjectivity: to attribute intentional attitudes that represent reality as being a certain way and that aim at truth but potentially fail to do so – paradigmatically, (potentially false) beliefs. Empirically, it turned out that around 4 years of age, in human ontogeny a social-cognitive “revolution” occurs such that children begin to manifest a conglomerate of new behaviours: They ascribe false beliefs to others (and themselves in the past) and explain and predict their actions based thereupon (see Wellman et al., 2001, for a meta-analysis). They distinguish appearances from reality (Flavell et al., 1987), and conflicting perspectives of different viewers on the same situation (Flavell et al., 1981, Perner, 1991). And they begin to intentionally deceive others, i.e., lead them to have false beliefs (Sodian, 1991).

Clearly, second-order intentionality of this kind is crucial to many characteristically human activities and achievements such as reflective thinking, full-fledged communication (according to Gricean analyses), and complex conventional activities (according to David Lewis, 1969). And it seems quite clear and (almost) consensus in the field that no other species, not even chimpanzees, reach these sophisticated levels of second-order intentionality (see, e.g., Call & Tomasello, 1999).

Soon, however, simpler forms of second-order intentionality came into focus: the ability to understand not necessarily full-fledged epistemic subjectivity (in particular, false beliefs), but simpler intentional attitudes such as perception and intention. Recourse to a taxonomy of intentionality by Searle (1983) might help to clarify this issue: Searle, following Anscombe (1957), distinguishes two kinds of intentional attitudes that have close analogues in different kinds of speech acts. First, there are cognitive attitudes with “mind-to-world” direction of fit. Their job, so to speak, is to bring the mind in accordance with the world – they aim at truth (and correspond to assertive speech acts). Beliefs and knowledge are the paradigm cases, but perception falls in this category as well. Second, there are conative or ‘pro’ attitudes (Davidson, 1963) with “world-to-mind” direction of fit, whose job, so to speak, is to bring the world into line with the content of the attitude (and so correspond to directive speech acts). Desires, wishes, hopes, and also intentions are in this category. Now, while beliefs and desires are the paradigm cases on both sides, there are specific attitudes on each side on the ‘periphery’ towards the world that, according to Searle, are the biologically and ontogenetically primary ones: perception (on the mind-to-world side), and intentions (on the world-to-mind side).

What came into focus thus was the following possibility: Just as the first intentional attitudes that develop in human infants and other animals are perception (of an objective world) and intentional action, the first form of second-order intentionality to develop should be understanding of perception and action. And with this came into focus the further possibility that the divide between humans and other animals might go, ontogenetically speaking, even deeper: Whereas the development of simple individual intentionality runs in parallel in humans and others, humans leave all other animals behind in developing even simple forms of second-order intentionality.

The development of such simple forms of second-order intentionality in human infancy has been described in analogy to the social-cognitive revolution at 4 years as the “9-month-revolution” (Tomasello, 1995, 1999). This cognitive revolution of social understanding manifests itself in several distinct – but cognitively related – behaviours that first emerge

from around this time: After having been engaged in 'dyadic' behaviours with either persons or objects for some time in the first year, children now for the first time begin to engage in 'triadic' behaviours that involve a referential triangle between child, other person and outside object/event which is jointly perceived/attended to or acted upon. Thus, infants at this age begin to flexibly and reliably look where adults are looking (gaze following), understand what others do and don't see (perceptual perspective taking), use adults as social reference points to disambiguate novel events (social referencing), and act on objects in the way they have seen adults act on them (imitative learning) – revealing an understanding of the adults' attitude/directedness towards the outside events (for an overview, see Carpendale & Lewis, 2006; Carpenter, Nagell & Tomasello, 1998; Tomasello et al., 2005). At this same age, infants also begin to use communicative gestures such as the pointing gesture to direct adult attention and behaviour to outside entities and make proto-comments on them (Liszkowski et al., 2004) – trying to influence the adult's attitude/directedness towards the outside events (Tomasello, 1995). The fact that all these skills emerge in developmental synchrony and correlated fashion (Carpenter et al., 1998) suggests a common underlying cognitive basis – an emerging understanding of oneself and others as intentional agents.

Comparatively, until quite recently, it was widely believed in the field that even such simple intentionality of second order was a uniquely human phenomenon. New experimental findings, however, show that at least chimpanzees develop quite analogous cognitive abilities: First, a series of studies by Hare et al. (2000, 2001) found that chimps understand something about others' perception. In a food competition situation, a subordinate and a dominant chimpanzee were placed into separate rooms on opposite sides of a third room. In the crucial conditions, food was placed in the third room such that the subordinate could see two pieces of food hidden while the dominant only saw one (his line of sight to the second one being blocked by a barrier). The basic finding was that the subordinates did indeed take into account what the dominants could and could not see: Knowing that the dominants would take all the food they could see, the subordinates went for the food that only they themselves could see much more often than they went for the food that both they and the dominant could see. Several control procedures and conditions (one using a transparent barrier that the subordinate apparently understood did not block the dominant's visual access to the food) effectively ruled out simpler explanation in terms of mere behaviour-reading.

Second, a study by Call, Hare, Carpenter and Tomasello (2004) suggests that chimpanzees understand something about intentional action. Chimpanzees were presented with a human who had food in his hands and then behaved in different ways, marked as either unwilling or unable to give them the food. There were three conditions in which the experimenter was unwilling in different ways (e.g., just staring at the ape, eating the food, teasing the ape with the food). These conditions were each paired with two unable conditions (e.g., trying to get the food out of a jar, and dropping it accidentally). In each group of matched conditions, the surface topography of the experimenter's behaviour (body movements and gaze direction) was kept as similar as possible. The main finding was that chimpanzees were more impatient – banged on the cage more, left the area sooner – when the human was being mean (unwilling) than when the human was trying but failing (unable),

even though in neither case did they get the food. The chimps in this study behaved in analogous ways as did human infants in a comparison study from 9 months of age (Behne et al., 2005).

The upshot of these lines of research on higher-order intentionality is thus the following: Complex higher-order intentionality in the form of a full-fledged folk psychology invoking beliefs and related subjective epistemic attitudes clearly seems to be a uniquely human, heavily language-dependent achievement developing from around 4 years of age. Simpler forms of second-order intentionality in contrast – an understanding of others and oneself as intentional and perceiving actors – develop in quite parallel ways in human ontogeny from around 1 year and in at least some other primate species.

Collective intentionality

Against this background, the following possibility recently came into focus: What is at bottom uniquely human and a likely foundation of specifically human forms of life, is not so much individual intentionality, but the ability, developing from the second year in human ontogeny, to enter into collective (or “We”) intentionality (Tomasello & Rakoczy, 2003; Tomasello et al., 2005).

With collective intentionality we deal when two or more subjects share an intentional “we” attitude which is not straightforwardly reducible to individual intentional attitudes.³ When you and I meet and agree to take a walk together, to use an example from Margaret Gilbert (1990), we form and then pursue the joint We-intention “*We walk together*”, which is not reducible to the sum of my individual intention “I walk” plus your analogous one. When I pursue my individual intention to walk and you pursue yours, we might end up walking beside each other, but not together. When we pursue our We-intention, in contrast, each individual does walk, of course, but acts as part of a joint action.

As in the case of individual intentionality, different kinds of collective intentional attitudes can be distinguished: collective beliefs, collective desires, etc. The central cases of collective intentionality for the present purposes are the arguably basic ones, namely collective intentions and actions – which constitute the class of cooperative acts and lie at the heart of societal and institutional life.

Clearly, collective intentionality presupposes individual intentionality of first order (for us to walk together, I have to be able to walk intentionally myself) and second order (for us to walk together, I have to have a grasp on your walking intentionally and how I can adapt to it): “The biologically primitive sense of the other person as a candidate for shared intentionality is a necessary condition of all collective behavior” (Searle, 1990, p.415). But clearly, individual intentionality, while being necessary, is not sufficient for collective intentionality. And so the present proposal is that while humans share with other animals simple forms of individual intentionality of first and second order, only humans have the ability to build on these to enter into collective intentionality.

³ For the central works in recent analytical philosophy on this, see Bratman, 1992; Gilbert, 1990; Searle, 1990, 1995, 2005, Tuomela, 1995; Tuomela & Miller, 1988. For an overview, see Tollefsen, 2004.

The relation between individual and collective intentionality is a dialectical one: On the one hand, human infants are cognitively equipped to understand each other as persons, as potential cooperators. Based on this equipment, they enter into collective intentionality and culture. But on the other hand, once children enter into collective intentionality and culture, acquire conventional practices and above all a language,⁴ this in turn shapes and transforms their individual cognitive development by supplying them with new means for thinking, much as Vygotsky and Mead have stressed (Tomasello & Rakoczy, 2003).

Before we turn to the empirical phenomena, some further taxonomic distinctions within the class of collective intentional affairs are relevant. Walking together is an example of a cooperative activity that does not essentially involve the conventional use of objects and any assignment of functions. Though such cooperative activities constitute the most basic form of collective intentionality, their cognitive structure is already quite complex: The individual participants have to understand each other as intentional actors, have to form and pursue a joint intention; and in the course of the joint act they have to be mutually responsive to each others' intentions and acts, often involving division of labour and complementary roles (e.g., Bratman, 1992). Crucially, even simple joint activities involve a normative dimension of commitment: When we embark on a joint project, each of the participants is committed to contributing her or his part to the pursuit of the common goal, supplying support to the other when needed, etc. (e.g., Bratman, 1992; Gilbert, 1990).

An important sub-class of collective intentionality involves the conventional use of objects and the collective ascription of functions to these objects.⁵ Using tools to build something together, or using pieces of wood to play chess together, are examples. Two kinds of functions can be distinguished here, with two corresponding degrees of conventionality: *Causal usage functions* are functions we ascribe to objects when we collectively use them instrumentally, i.e., as tools, and when we design and create objects as tools. The objects fulfil the function partly due to their physical causal makeup – the knife due to its sharpness, the hammer due to its hardness. Such *causal usage functions* are thus conventional in a weak sense: Nothing in itself makes a certain object a tool, but we can assign the function to the object simply by making use of its intrinsic physical makeup for our instrumental purposes.

Status functions, in contrast, are conventional in a stronger sense. They are assigned to objects merely as a matter of collective practice, where the objects cannot fulfil the func-

⁴ I will here hardly touch upon the development of language and its relation to collective intentionality – as this would easily go beyond the scope of the present chapter. On the one hand, language as a conventional practice is itself an instance of collective intentionality and thus in some sense secondary to collective intentionality. On the other hand, of course, language is in some sense the fundamental collective activity without which many other collective practices would not be conceivable.

⁵ Strictly speaking, functions are not only assigned to objects, but to actions as well (and, in fact, actions are logically the primary case – the status of objects is dependent on relevant actions one can do with the objects). Language is the paradigmatic example: Emitting such and such sounds in the right context according to the right rules counts as speaking. But I will here focus on the case of object functions, first because regarding objects the general forms of collective intentionality can best be illustrated. And second, because ontogenetically, it is plausible that children come to understand function assignment to objects before they understand it in the case of actions.

tion due to their intrinsic properties. A slip of paper is money, for example, and a piece of wood is a queen in chess, but one could have decided to pay with wood and play with paper. An object has a certain *status function* only in virtue of the collective intentional treatment of it as having this *status function* – the *status function* is brought into existence, constituted merely by collective intentionality. “X counts as a Y in context C” is the formula that expresses status function creation: “This piece of metal counts as money in our currency area”, for example, or “This piece of wood counts as a king in chess”.

Collective intentionality with the creation of status functions is what lies at the heart of institutional reality. Status functions create institutional facts (e.g., “This is a queen”, “This is money”, “This is a University”), that is, observer dependent facts that only hold in the eyes of a beholder collective creating them – in contrast to brute facts ‘out there’ (“This is a piece of wood”). Institutional reality as a system of status functions pervades our normal adult social life to the degree that we live as much in an institutional as in a natural world – we go to work or school, earn money to pay our rent, own property, are citizens, husbands or wives, and all day long we utter sounds with semantic status functions (meaning), i.e., speak a language.

Specific normative dimensions are involved in the different forms of collective “we” intentionality. In cooperation, as seen above, we commit ourselves to pursuing the joint action and are therefore responsible for trying our best in this pursuit. The assignment of causal usage functions brings with it the notions of good functioning and malfunctioning and the notions of appropriate and inappropriate uses of tools. Status functions, finally, involve a specific kind of rules, namely constitutive rules. Whereas regulative rules regulate an already existing activity (e.g., rules regarding on which side to drive regulate driving, which already exists before the rule), constitutive rules bring into existence the very activity they apply to (Rawls, 1955; Searle, 1969, 1995). For example, the rule of chess “The king can be moved one field in all directions” does not regulate an activity that already exists, but together with the other rules of chess it *constitutes* the very game. Formally, “X counts as a Y in context C” specifies a constitutive rule: that X is a Y in the relevant context; and that it is a Y in the relevant context, confers normative powers to the objects and carries normative implications (that it ought to be treated as a Y). A piece of wood is a queen in the context of chess; and that means it has the power to move in certain ways, ought to be used accordingly, and ought not to be used as firewood in this context, for example.

In sum, collective intentionality involves two or more subjects who share an irreducible “we” attitude, paradigmatically a “we” intention. Some forms of collective intentionality involve the collective assignment of functions to objects. The strongest of such functions, status functions, are those that get collectively assigned to objects merely by virtue of convention, when objects are collectively treated as having that function (“counting as something”). Constitutive rules underlie status functions, create institutional reality and bring with them normative implications – that the objects ought to be treated according to the rules in the relevant context. With this taxonomy at hand, let us now turn to the development of the different forms of collective intentionality in human ontogeny from the second year on and, from a comparative point of view, to the question how this development contrasts with that of other species.

Collaboration

In human ontogeny, simple collective intentionality develops from the second year in the domains of cooperative actions and pre-linguistic communication. Children from one and a half begin to engage in collaborative games with complementary roles and turn-taking structure and in collaborative instrumental activities with clearly differentiated roles (Brownell & Carriger, 1990; Eckerman & Didow, 1996; Warneken, Chen & Tomasello, 2006). In the course of such collaborative acts, they communicate pre-linguistically in appropriate ways (e.g., pointing to the required place for the partner). When the collaboration threatens to break down, they re-engage the partner and assign him his role (again by pointing; Warneken et al., 2006⁶). Children at this age, but not chimpanzees, also seem to have a simple understanding of complementary roles in joint activities, as indicated in their spontaneous role-reversal imitation (children: Carpenter et al., 2005; chimpanzees: Tomasello & Carpenter, 2005).

And communication itself, of course, is a cooperative activity characterized by collective intentionality. Even pre-linguistically, using pointing and other gestures, infants make proto-declarative communicative acts that are not just instrumental for attaining some individual end (like in proto-imperative acts of the form “gimme...”; Rivas, 2005): They point out information, for example, that others need (e.g., about the location of a lost object; Liszkowski et al., 2006). Chimpanzees, in contrast, do not spontaneously point; and the ones who learn to do so in human environments only ever use it proto-imperatively for instrumental purposes (Rivas, 2005; Tomasello et al., 2005). Infants’ rudimentary “sense of the other as candidate for shared intentionality” enables participation in these forms of joint cooperative and communicative activities which in turn function as a foundation and scaffold for the acquisition of language (Bruner, 1983; Tomasello, 2003).

Taken together, these studies thus suggest that during the second year of human ontogeny, children develop a nascent ability to engage in cooperative activities as the basic form of collective intentionality: On a simple level, they form and pursue shared “we” intentions with others, with a rudimentary awareness of the commitments and role structures characteristic of cooperative enterprises. The behaviour of chimpanzees, in contrast, does not necessarily warrant the ascription of collective intentionality proper, but might plausibly be characterized as complex social coordination only.

Collective status assignment and proto-institutional activities

Let us now turn to collective intentionality with the assignment of status functions. This form of collective intentionality lies at the heart of institutional reality without which human society would be virtually inconceivable. And it is here that the dividing line between human sociality and that of other species can be seen most clearly:

⁶ While human-raised chimpanzees in this study did show some social coordination in instrumental problems that needed two individuals for the solution, they did not engage in such communication and re-engagement behaviour. More generally, many researchers have argued that *prima facie* truly cooperative behaviours in chimpanzees, in particular social hunting, in fact are just sophisticated social coordination: one individual starts hunting at a certain place, then the next individual starts hunting, but cannot take the same place, then the third individual has to take even another place, etc.; see, e.g., Tomasello & Call, 1997; Tomasello et al., 2005.

Human beings have a capacity which, as far as I can tell, is not possessed by any other animal species, to assign functions to objects where the objects cannot perform the function in virtue of their physical structure alone, but only in virtue of the collective assignment or acceptance of the object as having a certain status and with that status a function. Obvious examples are money, private property and positions of political leadership. (Searle, 2005, p.7-8)

Money and political leadership are obvious examples of status functions, but from an ontogenetic point of view, it is equally obvious that young children early in development do not have much interesting grasp on such phenomena. What I would like to suggest as a potential cradle for children's entry into collective intentionality with status function creation, though, is playing games (see Rakoczy, 2006, 2007, in press-a; Rakoczy & Tomasello, 2007). In fact, adult rule games such as chess are also among the paradigmatic examples for practices involving status functions: "This piece of wood counts as a king in the context of chess", for example, and "In chess, the king moves one field in any direction". Of course, 2-year-olds don't play chess. But what children begin to, is to play simple rule games, and in particular, games of pretence.

From a comparative point of view, pretend play is quite clearly a uniquely human phenomenon. Though there are a few anecdotes of pretence-like behaviour in some human-raised animals (for an overview, see Mitchell, 2002), these are difficult to interpret, and generally, it is quite clear that no other species reliably engages in pretend play as we know it (for excellent reviews of precursors to pretend play in great apes, see Gómez & Martín-Andrade, 2002, 2005). Ontogenetically, children usually start to engage in simple pretend play in their second year.

Let's take as an example two siblings pretending that their parents' mobile phones are bananas. Child 1 takes a phone, puts it to her mouth, saying to her brother, "Hm, how delicious this banana is. Want some?" The brother then takes the phone, pretends to peel it and to take a bit, etc. Though this is not an instance of playing an established game with fixed rules, it is an instance of collectively playing a game with the assignment of transient status functions, making up ad hoc constitutive rules on the spot. "This phone *counts as a 'banana'* in our pretence context" is the central status function assignment. As the scenario unfolds, "It counts as peeled now" and then "It counts as eaten up now" enter the scene.

These assignments bring with them a normative structure of the joint activity. "X counts as Y in context C" means that in C, X ought to be treated accordingly as a Y. In the siblings' pretence game: Once declared a banana, the phone ought to be treated accordingly in the game. Some pretence acts are inferentially licensed in the game, others are not. Pretending to peel the phone/banana, pretending to eat it or to bake a cake with it are licensed, pretending to drive it or pretending to fax it are not (see Walton, 1990).

Children from 2 years do in fact seem to grasp this normative structure created through joint pretence stipulations – as indicated in their inferentially appropriate responses to others' pretence acts. When an experimenter pretended to pour tea into a cup, for example, children pretended to drink from the cup. When the experimenter pretended to spill tea on the table, in contrast, children pretended to clean the table (Harris & Kavanaugh, 1993; Rakoczy & Tomasello, 2006; Rakoczy et al., 2004). And they systematically distinguish such pretence acts from superficially analogous behaviours with different intentional struc-