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PLURALISM, INTERACTION, AND THE ONTOGENY OF SOCIAL COGNITION

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This chapter aims to provide an overview of the development of a variety of socio-cognitive processes and procedures throughout ontogeny. For many years the received view of social cognition took it for granted that it was based, wholly or primarily, in mindreading abilities — the ability to attribute contentful mental states to others by means of deploying folk psychological theories or by running simulation routines on one’s own mental states. From the late 1970s through the 1990s it would be fair to say that the received view was that everyday social cognition was always based, in mental state attribution achieved by theorizing about other minds, simulating other minds, or some combination of the two.

Today research is generally more pluralist in outlook, allowing that other kinds of non-attributional processes and practices can also play an important part in and in some cases are sufficient for social cognition. Some pluralist approaches do more than add to the existing options; they insist that we rethink the nature and basis of social cognition more fundamentally. For example, some versions of pluralism allow that theoretical inference and simulation sometimes do important work in enabling an understanding of others but understand the role that such theorizing and simulating plays in ways that are quite unlike traditional ‘theory of mind’ accounts of social cognition. In promoting pluralism of this stripe, our analysis in what follows lays stress on the interactive character of socio-cognitive skills and the intersubjective contexts in which they are acquired. In particular, we focus on processes and procedures that enable us to understand the behavior of others in terms of person-specific character traits, habits, and attitudes. These processes and procedures range from those that involve person-specific associations that shape infants’ interactive behavior early in ontogeny to person-focused narratives that may presuppose mastery of language and special discursive practices. The latter capacities come into play when interpreting or explaining reasons – when we make sense of why another person has done something in light of his or her personality and personal history.

All in all, we present a pluralist vision of social cognition — one that assumes that rather than relying on a single or even default procedure in social cognition, individuals use a variety of methods to keep track of and understand other minds. We explore the idea that, as a rule of thumb, individuals use processes and procedures that are the cognitively least effortful ones to them, as appropriate to context. We conclude with a discussion of the costliness of various socio-cognitive processes and procedures, suggesting that those that emerge at the beginning
of ontogeny are cognitively ‘cheap’ and continue to play an important role in every social understanding in adulthood.

Traditional accounts of social cognition and alternatives

How do we understand the minds of others? What socio-cognitive processes come into play and what procedures do we employ when we seek to understand what other people think and feel in a given situation? Traditionally, the choice was between two main options: Theory Theory (TT) and Simulation Theory (ST), or some combination thereof. According to TT, to understand other minds requires employing a folk psychological theory containing laws about how mental states interrelate and motivate agents to act. Proponents of the empiricist version of TT (e.g., Wellman and Gopnik 1992) state that we learn, modify, and revise our folk psychological theories in the course of development and interaction with the environment. Proponents of the nativist version of TT (e.g., Baron-Cohen 1995; Segal 1996) propose that distinct mindreading modules are innate but emerge in the course of their own developmental timetable. ST, in contrast, claims that we put ourselves imaginatively ‘into the shoes’ of another person and simulate the thoughts and feelings we would experience in his or her situation (e.g., Goldman 2006) – thus we directly manipulate our own mental states in the process obviating the need to consult any laws about mental states.

Despite accounting for different socio-cognitive procedures, TT and ST share a number of assumptions about social understanding: advocates of both mindreading theories assume that social cognition always, essentially, depends on the attribution of mental states. Traditionally, proponents of TT and ST also subscribed to an ‘unobservability principle’ about mental states – which holds that other people’s mental states – in particular beliefs and desires – are explanatory constructs and thus not directly perceivable (see Krueger 2012 for a discussion of this principle). Versions of TT and ST that accept this idea introduce a gap between ourselves and others that observers need to bridge by, say, inferring the thoughts and feelings of other people via theorizing or simulating processes. Traditional mindreading theories promote the idea of social understanding as an observational enterprise, rather than one involving interaction. Hence, the majority of early studies that have been conducted to investigate the development of children’s understanding of other people’s behavior in terms of mental states are observational paradigms (see Wellman et al. 2001 for an overview). Relatedly, given this focus, classic mindreading theories had little to say about what knowledge of person-specific characteristics or attributes – such as character traits or habits – played in understanding others.

Times have changed. In recent years, several authors have claimed that mindreading theories are in fact compatible with a more interactive understanding of social cognition that tolerates the possibility of direct perception (Herschbach 2008; Lavelle 2012). For example, Carruthers (2011), despite the fact that most theory theorists, including Carruthers himself, had been describing social cognition in terms of making inferences ‘when observing the other’s behavior’ (Carruthers 2002, p. 666.), tells us that, “both Gallagher and Hutto are mistaken . . . in construing [the traditional mindreading theories] as purely third-person and observer based. . . . For everyone thinks that that primary use of mindreading is in face-to-face interactions with others” (p. 231). Defenders of mindreading theories who allow for the direct perception of other’s mental states still hold that the sub-personal processes that enable such face-to-face interactions are inferential – theoretical or simulative – in character. Arguably phenomenological considerations will not settle this debate; to do so requires taking the dispute to a whole new level, namely, the sub-personal level.3
Proponents of mindreading theories of social cognition allow that even though various non-mindreading processes and procedures can play roles in everyday social understanding, mindreading is always required. This is true even of hybrid theories that combine elements of TT and ST. For example, hybrid theories that take TT to be core hold that theoretical inference is always involved in social understanding—because we must consult the core laws of folk psychology, even if doing so needs to be supplemented by simulation procedures (e.g., Botterill and Carruthers 1999). Vice versa, hybrid theories that take ST to be core hold that simulation is always in operation when understanding others, even if it needs to be supplemented or supported by theory (e.g., Goldman 2006).

Pluralists reject such necessity claims but they also reject the weaker assumption that there is a default procedure that is consistently deployed in every social cognitive task. They hold that people use a variety of socio-cognitive procedures and that no single procedure is typically employed as a default whenever attempts are made to understand other minds. On this view, social cognition involves a combination of capabilities or processes, “one of which may be appropriate or practical for one kind of situation, and another for a different kind of situation”, but that there is no default procedure that we tend to use in every situation (Gallagher 2015, p. 18; see, e.g., Fiebich and Coltheart 2015). Accordingly, we are quite flexibly in how we deal with and understand others: should one procedure fail, for example, other procedures may come into play.

Despite this degree of liberality, pluralism must not be confused with a smorgasbord approach to social cognition. Not everything goes. For example, it is difficult (indeed impossible without making some strained theoretical adjustments) to accommodate standard TT and ST accounts—whether pure or hybrid—within a pluralist approach. Pluralists can allow for theory or simulation to play a role in acts of social cognition. Yet that is quite different from assuming that the specialized cognitive mechanisms that TT or ST take to understand different forms of mindreading exist or are deployed, separately or in combination, in certain acts of social cognition. In rejecting the standard mindreading proposals, the kind of pluralism we endorse differs importantly from integrationist accounts (see, e.g., Bohl and van den Bos 2012). Integrationist accounts want to reconcile TT, ST, and non-mindreading alternatives in a way that we think is problematic. The competing core assumptions of pure TT and ST, and the way these have to be accommodated in hybrid theories, make it difficult to understand how TT and ST could be combined in a truly integrated way in acts of social cognition. In contrast, theory and simulation might play different roles in social understanding as long as they are not understood under the auspices of TT or ST, which assume the existence of quite distinct kinds of mindreading mechanisms. A softer reading of ‘theory’ and ‘simulation’ that makes no such assumption is, by contrast, clearly compatible with a genuinely pluralist perspective.

In general, pluralist approaches contend that third-person mental state attributions that may involve theory or simulation do not lie at the heart of everyday social understanding and often come into play peripherally in ambiguous or unfamiliar contexts that make individuals puzzled about the other person’s behavior (Gallagher 2001; Fiebich and Coltheart 2015). Other factors such as trading second-person narratives; being sensitive to environmental contexts, norms, habits, social conventions; and having knowledge of character traits of familiar individuals are far more central (see also Andrews 2012 for a take on pluralism similar to the one offered here). Such pluralist accounts need to be distinguished from so-called ‘multi-system accounts of mindreading’ (e.g., Christensen and Michael 2015) that focus particularly on socio-cognitive procedures that rely on the attribution of mental states.

With support from findings from developmental psychology and social psychology, Fiebich and Coltheart (2015) argue that fluency and cognitive effort are main factors in determining
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which particular socio-cognitive procedure an individual will be prone to use in a given situation of social understanding. Rather than there being a standard default procedure of social understanding used in all contexts, people will — as a rule of thumb — make use of socio-cognitive procedures that are cognitively least effortful to them in a given context; that is, 'fluency' plays a central role (call this the 'fluency assumption'). This account draws on a definition of fluency in social psychology according to which fluency can be understood as the subjective experience of ease or difficulty associated with completing a mental task (Oppenheimer, 2008, p. 237). A number of findings from social psychology in other domains (e.g., economic games) have shown that people typically make use of that cognitive procedure that is cognitively least effortful to them in a given context — unless they experience cognitive strain, which may place them on higher-order reasoning levels (see Kahneman, 2011 for an overview). Fiebich and Coltheart (2015) propose that the same may hold true in social cognition (see Fiebich, 2014 for a discussion of the role of fluency in early social cognition).

Varieties of social understanding in ontogeny

What part might social interactions themselves play in the acquisition and use of various socio-cognitive procedures throughout ontogeny? Drawing on previous work, we present a refined pluralist account of social cognition that emphasizes the role of intersubjective interaction (Fiebich, 2015; Gallagher, 2001, 2005, 2007; Gallagher and Hutto, 2008). There is ample evidence that children acquire various socio-cognitive skills that allow them to understand other people's behaviors, actions, intentions, and emotions. Moreover, there is reason to think that the great bulk of these basic socio-cognitive processes do not obviously or necessarily rely on any kind of mental state attribution.

Interaction Theory (IT) was inspired by Trevarthen’s (1979, 1998; Trevarthen and Aitken, 2001) notions of primary and secondary intersubjectivity: it focuses on basic embodied, sensorimotor capacities for interacting with others and the relevance of environmental contexts to account for non-linguistic and pre-reflective aspects of social understanding that are present early in ontogeny (Gallagher, 2001, 2004, 2012). Hutto (2008) develops a view that focuses on linguistic and narrative competencies, arguing that folk psychological narrative practices that people typically use when understanding other people’s behavior in terms of beliefs and desires builds upon socially supported story-telling activities and needs to be understood as a skillful know-how. Combining the key insights of these approaches, Gallagher and Hutto (2008) offered an integrated embodied and narrative practices account of social cognition which distinguished between three different sets of socio-cognitive skills or competencies acquired throughout ontogeny: (i) primary intersubjective processes and skills in dyadic relations that presuppose sensitivity towards embodied emotions and interactive behavioral patterns; (ii) secondary intersubjective processes that involve triadic relations of joint attention and interaction, and allow for understanding embodied intentions in social (normative) and pragmatic contexts; and (iii) communicative and narrative skills that allow for sophisticated triadic relations involving linguistic and narrative competencies for understanding behaviors and reasons.

In the present chapter we elaborate this account in the spirit of a pluralist approach to social cognition. This account is enhanced and made more precise by drawing upon literature from developmental and social psychology that provides details about the ages at which infants start to understand other people's behavior, not only on the basis of interaction and communicative-narrative competencies, but also by associating particular traits, attitudes, habits, and the like with specific familiar persons, or members of specific social groups (see Fiebich and Coltheart, 2015 for a discussion). Personal and social relationships between the interacting partners shape...
interaction and social cognition in significant ways early in ontogeny as primary and secondary intersubjective relations develop. Moreover, once communicative and narrative competencies are acquired, the knowledge an individual has about another’s person-specific characteristics and history will inform our narrative practices in ways that are the basis for our understanding of another’s reasons for action (see Hutto 2008 for a discussion). After considering these issues, we conclude with a general discussion about the role of interaction and fluency in social cognition.

**Primary intersubjectivity**

Primary intersubjectivity (Trevarthen 1979; Trevarthen and Aitken 2001) is based upon sensorimotor abilities and perceptual capacities in processes of strong interaction, where ‘strong interaction’ is understood as

a co-regulated coupling between at least two autonomous agents, where (i) the co-regulation and the coupling mutually affect each other, constituting a self-sustaining organization in the domain of relational dynamics, and (ii) the autonomy of the agents involved is not destroyed.

(De Jaegher et al. 2010, pp. 442–443)

Social interaction is thus characterized as a reciprocal, two-way enterprise in which two persons enter into a dynamic coupling that affect each other’s actions and experiences. Human beings experience primary intersubjectivity from birth onwards, characterized by infants’ sensitivity to and emotional regulation of the others’ bodily gestures, movements, and facial expressions perceived in a dyadic interaction. Trevarthen contends that even newborns are engaged in dyadic interactions (mostly with their mother) in an embodied and stimulus-dependent way as evidenced by studies of neonatal imitation (Meltzoff and Moore 1977; Field et al. 1982). Since neonates only imitate gestures like tongue protrusion and mouth openings performed by persons but not mechanical devices, neonatal imitation has been regarded as a genuine social-interactive response (Legerstee 1991a, 1991b).

Numerous studies show that infants strive for emotional engagement and contingent patterns of interaction early in ontogeny. For example, a recent follow-up study of the so-called ‘still face paradigm’, initially conducted by Tronick et al. (1978), revealed that even 4-day-old infants show patterns of distress when their social interaction partner disrupts the emotional connection in an ongoing interaction by meeting them with a neutral instead of an emotional and responsive facial expression (Nagy 2008). Two- to three-month-olds also display signs of distress when they are faced with a time-delayed video-taped interactive response where the timing and embodied dynamics of interaction are missing (Murray and Trevarthen 1985). Neuroscientific research shows that being engaged in social interaction suffices to activate reward-related brain regions (Schilbach et al. 2006; Schilbach et al. 2013), and it is likely that such neuronal activity can be found already in young infants and that the experience of reward comes along with phenomenal experiences of pleasure.

Other studies show that 3-month-olds are sensitive not only towards embodied emotions but to the particular dynamics of interaction and to goal-directed movements of another person (Sommerville et al. 2005). At that age, infants differentially respond to intentional movement and (imperfectly contingent) relations versus causal (perfectly contingent) relations. Initially infants show a clear preference for looking at perfectly contingent images, but this preference changes around month 5 to high—but-imperfect contingent images (Watson 1979;
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Bahrick and Watson (1985). Mirror neuron activation may be involved when infants observe goal-directed behavior such as grasping, and there is evidence for such activation at 6 months (Nyström 2008). Even earlier, however, 3-month-olds exhibit a sensitivity towards the structure of interactive play routines (Fantasia et al. 2014).

Infants not only prefer to interact with animate over inanimate entities but also favor interactions with familiar individuals or members of familiar social groups. Even newborns are sensitive towards other people’s person-specific identity as indicated by their capability to recognize the face of persons they most interact with (e.g., their mother) as long as also the hairlines of these persons and outer contours are visible and not covered by a scarf (Pascalis et al. 1995). From month 3 onwards, infants are sensitive to the social identity of an individual, i.e., social group membership, and prefer to interact with people with own-race faces (Kelly et al., 2005). That is, early in ontogeny, personal and social relationships between the interaction partners shape the (preferences for) social interaction itself. As we will see, associations with person-specific or group-specific traits and habits may be formed in further dimensions of intersubjectivity. In general, the socio-cognitive processes that come into play in primary intersubjective relations rely essentially on an emotional sensitivity to the gestures of the interaction partner as well as the experienced quality of dyadic interactions, dependent on the interaction partner’s person-specific or social identity as well as the experienced contingency of the interaction dynamics.

Secondary intersubjectivity

In the first year of life, secondary intersubjectivity, characterized by the “systematic combining of purposes directed to objects with those that invoked interest and interaction from a companion” (Trevarthen 1998, p. 31), emerges. The capacity for joint attention allows infants to enter triadic interactions, in which they can learn what things are called and what they are used for in situations of social referencing (Striano and Rochat 2000). The defining feature of secondary intersubjectivity is that objects or worldly events become a focus between people; they are communicated about and shared reference is made to the things in the surrounding world (Gallagher 2004; Hobson 2002).

It has been assumed traditionally that the capacity of joint attention marks a ‘revolution’ in the ontogenetic development of human infants around month 9 (Tomasello 1999). However, recent studies suggest that infants are engaged in triadic interactions involving joint attention even earlier (see Reddy 2008 for a discussion). For example, Hamlin et al. (2008) found that 7-month-old infants prefer and reach for toys that they have seen an experimenter grasping before. Notably, this study had been carried out in an interactive experimental design. That is, the experimenter attracted the infant’s attention:

she first ensured that the infant looked at each of the two toys, snapping behind each one if necessary to direct the infant’s attention to it. Then, she called the infant’s attention to herself, briefly making eye contact, and demonstrated the grasp or back of hand action, holding eye and hand contact with the toy for 5 seconds.

(p. 488)

All of this was accompanied by verbal expressions such as ‘Look!’ or ‘Oooh!’. As pointed out by Cabr a (2010), communicative settings are established by ostensive cues such as waving, calling or making eye contact. In interactive settings, infants enter a social community by learning what an object means ‘to us’ – how we ‘use it or value it. These situations often involve social referencing in which infants refer to another person, checking their reaction or facial expression, to learn
about the values and functions of objects. In general, sense-making activities can be understood as lying on a continuum; for example, some situations of social referencing are instances in which one agent learns from the other in an interactive context. In other interactive situations, in contrast, infants may be engaged in joint sense-making activities in which both agents make sense of the object together (De Jaegher and Di Paolo 2007; De Jaegher et al. 2010).

That is, in interactive settings, infants may learn the values and functions of objects in the world. However, as pointed out by Egyed et al. (2013), we need to distinguish between interactional contexts (where there are second-person engagements between at least two people) and observational contexts (where one person takes a third-person observational stance towards another) in such experimental paradigms. In both contexts the knowledge that observing or interacting agents may have of another person's particular preferences, traits, and behaviors may play a role (Fiebuch and Coltheart 2015). Egyed et al. (2013) conducted a study that compared infants' learning in interactive compared to observational settings; they found that infants will hand an unknown adult one of two objects significantly more often if they have seen a positive emotional expression made by another adult towards this particular object in a communicative setting. The infant acts on a generalization about the value of the object itself (see also Moore, ch. 2 this volume, for a discussion of social learning and natural pedagogy). Notably, this effect hasn't been found in observational contexts. When infants observe from a third-person perspective another person grasping for one of two objects, they associate the preference with that very person rather than understanding the object as being likeable per se. No generalization is made about the object's value for others. Such associations may shape infant's expectations of that particular person's behavior (but not the behavior of others). For example, 6-month-olds may be surprised (as indicated by longer looking times) when they observe a person grasping for an object he or she has not previously grasped (Woodward 1998). Finally, such associations may shape infants' interactive behavior with that very person; for example, they may hand over the object they expect the other person to prefer in helping contexts. In general, this socio-cognitive process should be understood as a type of associative learning. Around age 2, children associate particular behaviors with members of specific social groups and they use that knowledge when engaged in pretend play such as 'mother soothes her baby' (O'Reilly and Bornstein 1993). Later in ontogeny, when linguistic skills are acquired, associations may become explicit and enter into narratives we generate about others (see next section).

Often the pragmatic context plays a central role in understanding another person's behavior in secondary intersubjective relations. Children before one year of age start to attend to the pragmatic context to understand the agent's embodied intentions. Understanding social rules and roles may facilitate behavior understanding in specific play contexts. In other play contexts, knowledge of rules acquired via social referencing or understandings of the situation that may have been built on the basis of associative learning may be supportive of social understanding. From age 2 years onwards, children comprehend rules and protest if another person does not observe these rules in the appropriate context, for example, when breaking rules in a game (Rakoczy et al. 2008). Even before 3 years of age, in secondary intersubjective relations, children take into account socio-normative and pragmatic aspects of the contexts in which the social interactions take place. Between ages 3 and 4, children build scripts that classify the typical course of an event such as a birthday party (Fivush and Hamond 1990).

**Communicative and narrative practices**

According to empiricist theory theorists, individuals understand (or can explain) another person's behavior in terms of beliefs and desires via folk psychological theories that rely essentially
on mental state term acquisition and conceptual change. For example, although 2-year-old children understand that other people have their own experiences (e.g., desires or emotions such as wanting or fearing things), they do not yet have a concept of belief. That is, at this age children understand other people's behavior on the basis of a 'desire psychology' that includes an elementary conception of simple desires and emotions. Later on, children acquire a 'belief-desire psychology' according to which beliefs and desires are thought to jointly determine actions (Wellman and Gopnik 1992). It had been assumed on this empiricist TT view that a full-fledged folk psychological understanding of other people's true and false beliefs is acquired between ages 4 and 5 (see Wellman et al. 2001 for a review). Yet recent studies suggest that such understanding is not acquired until the 6th year of life, for only then do children show signs of understanding true beliefs (Fabricius et al. 2010). As pointed out by Gopnik (1998), the structural features of folk psychological theories include (i) abstractness, (ii) coherence, (iii) causality, and (iv) ontological commitment, features also present in other kinds of theories such as causal theories or behavioral theories (see Baron-Cohen et al. 1985 for a discussion). In general, folk psychological rules have been understood as psychological generalizations. They have been construed as laws employed across many contexts, although their adequacy depends on their being hedged by *ceteris paribus* clauses; for example, *if* A wants to drink a beer and believes that there is a bottle of beer left in the fridge, then *ceteris paribus*, A will go to the fridge to get that bottle.

On an alternative view, it seems clear that social interaction is essential for language acquisition and the development of any folk psychological competence that involves explicit and articulate mastery of mental state terms. Once children have acquired linguistic skills, they are capable of being engaged in verbal communication and narrative practices, i.e., story-telling activities that may refer to the reasons why an agent has behaved in a certain way. These are folk psychological narratives (Hutto 2008). Narrative practices appear to play a major part in the development of this competence. Taumoepoe and Ruffman (2006), for example, found in a longitudinal study that maternal 'mentalistic narrative practice', which involves the explicit reference to another person's mental states, directed at 15- and 24-month-olds correlated with the children's later mental state language and emotion understanding (see also Slaughter et al. 2007; Taumoepoe and Ruffman 2006 for similar findings). However, whereas 'mentalistic narrative practices' are prevalent in action explanations in Western cultures such as Germany or the US, members of Eastern cultures such as Japan or China are prone to be engaged in 'behavioral-contextual narrative practices', which involve an explicit reference to the normative behavior of another person in a specific socio-situational context. Indeed, children from, at least some, Eastern cultures pass tests of the development of their understanding of other people's behavior in terms of beliefs and desires later than their Western peers (Naito and Koyama 2006; Liu et al. 2008; Lavelle, ch. 10 this volume). This may be due, at least partially, to the culture-specific divergences in narrative practices (see Fiebach, in press, for a discussion).

Various experimental studies investigate how children's understanding of other people's actions as guided by mental states unfolds throughout ontogeny. In one version of the so-called 'false belief task', for example, children observe the story character Maxi putting a chocolate bar into cupboard x. Then, in his absence, his mother displaces the chocolate bar from cupboard x to cupboard y. When Maxi returns, the children are asked where Maxi will look for his chocolate bar. This task is typically passed by 4 or 5 years of age, and only those children who are capable of distinguishing Maxi's (false) belief ('chocolate bar is in x') from their own belief ('chocolate bar is in y') point correctly to the cupboard where Maxi falsely believes the chocolate bar being located (see Wellman et al. 2001 for a review). Of course, TT explanations of the findings from these traditional, elicited false belief tasks presuppose the correctness of
the theory (see, e.g., Stich and Nichols 1992, p. 66). However, in such cases it is likely that children do not just predict an agent's behavior by applying folk psychological rules about how the agent's mental states motivate the agent to act; they may also need to invoke behavioral rules such as 'an agent who has not perceived an unexpected change in her environment will believe that her environment has remained the same' (see Perner 1999, p. 412, for a discussion).

We argue that this experimental setting cannot count as a paradigm example of everyday social cognition. Here, our facility with mental state explanations needs to be understood as a kind of skillful 'knowing-how' rather than a theory-based 'knowing-that' (see Hutten 2008 for a discussion). Accordingly, the mature folk psychological competence that we gain through engaging in narrative practices is not essentially theoretical in nature. On this view, folk psychology is the exercise of special competence—a narrative practice—of making sense of another person's action by attributing reasons to her in a concrete socially structured context. In general, attributing 'beliefs' and attributing 'reasons' need to be conceptually distinguished from each other. The former is necessary but not sufficient for the latter. Thus while belief attribution might be achieved by simple inference, explaining reasons is more complex: it requires knowing how propositional attitudes, such as beliefs and desires, interrelate. The Narrative Practice Hypothesis contends that the latter knowledge is acquired through mastery of narrative practices (Hutto 2007; 2008).

Considerations about autism lend some support to the idea that folk psychology competence requires more than, or something other than, theory. People with autism are typically impaired in understanding other people's behavior in terms of beliefs and desires. Yet some manage to pass false belief tasks by explicitly learning the required folk psychological rules and applying them in a thoroughly conscious and deliberative manner. Even so, they remain impaired in applying such rules flexibly across the many and varied situations of social understanding in everyday life. The application of general rules is especially problematic in interactive contexts in which other people's embodied intentions and feelings are often ambiguous and require quick reactions. Applying explicit folk psychological rules in such circumstances can be difficult or even impossible for autistic people (Zahavi and Parnas 2003; Gallagher 2004). This implies that normally developing individuals, who make such attributions fluently and fluidly, possess a competence that involves more than the possession of general rules.

To understand a person's reasons involves generating and consuming narratives in which mental states do not feature at all. In many cases we understand others by focusing on their particular attributes, history, roles, or situations. We associate particular character traits and habits with particular individuals or social groups that we are familiar with. Any and all of these factors may be highlighted in our narratives when offering what Malle et al. (2007) have called 'causal history explanations', such as 'Bill gave a large tip, because he is generous'. The important point is that attributing generosity to Bill may help us to understand him even though we are not thereby attributing any mental states to him (Fiebich and Coltheart 2015).

Moreover, there are serious limits to understanding others if we call on only general, theoretical knowledge. For example, when trying to understand why Laura is going to India, we might need to appeal to generalizations informed by general knowledge if we have never met Laura, or don't know her personally. For example, we might conjecture that: "Laura, like many young, American college students, may believe that India is a romantic place and that she can learn about Eastern meditation practices there and have an adventure. So Laura might desire to go to India for such reasons." At best, such speculation will yield only a thin and unreliable understanding of why Laura may have taken her trip. It is more secure to draw on our personal knowledge of Laura to better understand her possible reasons. For example: "Laura is generally motivated to help people. She may be going to India to work in impoverished villages." But this too is
speculative, even if grounded on our knowledge about her. It is far more secure still, although by no means infallible, to rely on what Laura has told us about her reasons for going — that is, to attend to her first-person narrative. Of course she may not be able to supply her true reason for acting: Laura may not know her reasons, she may lie, or might be deceiving herself. Even so, it is still the case that asking her directly for her narrative is the richest, and most epistemically secure, way to get at her reasons (see Hutto 2004; Gallagher and Hutto 2008 for a discussion).

Summary and outlook

In this chapter, we have outlined a complex, pluralist account of social cognition. On this account, understanding other people’s behavior typically relies on developing a wide variety of diverse socio-cognitive processes, practices, and procedures. In any particular situation of social understanding, why is one process, procedure or practice employed rather than another? One possibility is that, as a rule of thumb, individuals are prone to make use of those socio-cognitive processes or procedures that are cognitively least effortful to them in a given context (Fiebich and Coltheart 2015). Another possibility is that the normative constraints (Andrews, in press) or other circumstantial factors of the given situation elicit one (or a combination of) socio-cognitive process(es) or procedure(s) rather than another one.

In identifying the various processes, procedures, and practices that may be involved in social cognition, we gave an overview of how and when some of these processes are likely to emerge throughout human ontogeny. In particular, we emphasized the various roles that social interaction may play in the ontogenetic development of such processes. More generally, we hypothesized that intersubjective processes that emerge near the beginning of ontogeny are also least cognitively demanding. On this view, primary and secondary intersubjectivity continue to constitute our primary and most pervasive way of understanding other minds throughout the lifespan (Gallagher 2001). Empirical evidence for this can be found in behavioral studies of adult embodied interactions and joint actions in work situations (e.g., Lindblom 2015), and the role of gestures in communicative actions (e.g., Kendon 1990). Not just infants but also adults are able to perceive emotions and intentions on the basis of sensitivity to minimal behavioral information (see Gallagher 2012 for further discussion). Also, rather than relying on the costly set of meta-cognitive operations that are likely involved in explicit third-person theoretical inference or simulation, people primarily understand the actions of others in a narrative fashion that involves attending to social roles, group traits, or the history and attributes of particular individuals (Hutto 2008). In such cases it may often be easier to use what we know about a person’s character traits or behaviors — gained via associations that are assumed to be cognitively cheaper than trying to infer reasons from actions using general principles (Fiebich and Coltheart 2015). Research on adult social cognition speaks in favor of the ‘fluency assumption’. For example, Malle et al. (2007) found that people typically refer to beliefs and desires in reason explanations when explaining the behavior of a foreigner, but refer to traits or other person-specific characteristics (e.g., a person’s attitudes, habits, and so on) in causal history explanations when they are familiar with the individual whose behavior they need to explain. In line with the fluency assumption, making use of already established associations ought to be cognitively cheaper than, say, engaging in theorizing or simulation routines. Accordingly, this proposal about the appeal to the least cognitive effort principle may help to explain Malle et al.’s (2007) findings. In line with this, Apperly et al. (2006) found that belief reasoning in adults does not function automatically, whilst a number of studies show that stereotype activation, i.e., associations of traits with members of a particular social group, does (see, e.g., Macrae and Quadflieg 2010, for an overview).
We’ve suggested that social cognition can involve a wide variety of socio-cognitive processes, practices, and procedures, which are acquired in ontogenetic development that involves primary and secondary intersubjective interactions, augmented by mastery of communicative and narrative practices. We rely on these same processes as adults, and we understand others by deploying such processes separately, or in conjunction or combination, depending on the situation. Some cases may involve only interactive, perception-based attending to the other’s embodied movements, gestures, facial expressions, and vocal intonations. Some may require us to focus on the physical, pragmatic, social, or cultural peculiarities of the context. Other cases may require us to appeal to general theoretical knowledge. In others still our knowledge about a particular person may be brought into play or we may need to appeal to a person’s background narrative. Social cognition is clearly not just one thing; and it’s not just a capacity that resides within individuals as individuals. It is always context dependent and draws on a number of capacities that involve the presence and/or participation of others.

Acknowledgments

Thanks to Kristin Andrews and Julian Kiverstein for helpful comments on an earlier version of this chapter. This work has been supported by a Humboldt Feodor-Lynen fellowship awarded to Anika Fiebich for research stays abroad in 2015 to collaborate with Shaun Gallagher in Memphis (USA) and Dan Hutto in Wollongong (Australia) on a project “Varieties of Social Understanding: The Role of Interaction”, and by the Humboldt Anneliese Maier Research Prize awarded to Shaun Gallagher.

Notes

1 Methodologically, we distinguish between socio-cognitive processes that occur automatically and typically unconsciously and socio-cognitive procedures that may be subject to conscious and deliberative control.

2 Sometimes such theorists have even gone so far as to openly endorse an ‘inner world hypothesis’ (Wellman 1992).

3 For arguments against the assumptions of mindreading theories about the relevant sub-personal processes, see Gallagher (2015) and Hutto (2015).

4 The oddity of such a possibility is revealed by the fact that even those who favor hybrid TT-ST accounts of some sort do not assume that we have two entirely distinct, yet sufficient, mindreading devices that might be used on different occasions when making sense of others.

5 Note that forming associations about a particular individual needs to be distinguished from having a model of an individual person or group (Newen 2015; Andrews, ch. 7 this volume).

6 Intriguingly, and in line with the traditional findings, false belief tasks seem to be passed by means of belief reasoning already by 4- to 5-year-olds. Using different methods in false belief tasks compared to true belief tasks in children at that age can be explained by cognitive dissonance and fluency (see Fiebich 2014 for a discussion).

7 Note, however, that narrative practices that focus on situational factors as opposed to mental states may also refer implicitly to the agent’s actions as being driven by mental states; for example, “She went to the café because [she thinks that] they have the best cappuccino” (Malle et al. 2007, call this an ‘unmarked reason explanation’).

References


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