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Introduction

How do we understand others? What is the nature of social cognition? What kind of mechanism(s) do we employ when we represent others as having mental states like beliefs, desires, emotions etc.?

TT, ST, IP, and NPH are the most prominent views today. But neither of them can cover all cases of mindreading and thus make good their strong and universal claims that their respective strategy is either the only or the most pervasive strategy we employ to understand others.

We argue that we need a multidimensional account that allows for different strategies while it avoids the shortcomings of the alternative accounts, but preserves their advantages.
Which of these strategies is (or *needs* to be)



employed depends on (a) our prior relation to (and familiarity with) the person in question, (b) the behavioural patterns we observe in the current situation, and (c) the type and complexity of the mental phenomena in question.

Central are the distinctions between *basic* and *high-level mental phenomena* and between a *non-conceptual* form of understanding other minds and a *conceptual* one.

Our claim is that we develop '*person models*' from ourselves, from other individuals and from groups. These models - *non-conceptual person schemata* and *conceptual person images* - are the basis for the registration and evaluation of others as having mental as well as physical properties.

Theories of Social Cognition

Theory-Theory (TT)

We ascribe mental states to others just like we postulate theoretical entities in the sciences, i.e. we employ a folk-psychological theory (Gopnik, Wellman 1994). This theory may be revised during cognitive development.



Problem

The mechanisms for social cognition in early infancy cannot be characterized as a theory in any interesting way. A competing version of TT distinguishes various innate neural mechanisms, one of which is designed to understand others (Frith 2003)



Simulation-Theory (ST)

We use our own experience as an internal model to put ourselves in other people's 'mental shoes', i.e. we *simulate* in our own minds what the other person might be thinking (Gordon 1986, Heal 1986, Goldman 2006). We create pretend mental states in ourselves and project them onto the other.



Problem

While ST of high-level mindreading can only account for simulation of decision-making, low-level mindreading cannot be conceptualized as simulation in any interesting way, since it is more direct.

Interaction-Theory (IT)

There is no problem of *gaining access* to other minds, since mental states are not 'hidden' behind meaningless behavior. Typically, we are not detached observers, but actively engaged in conversational situations with others. Since pragmatic social interaction is essentially characterized by our embodied practices, facial expressions, gestures, etc., we can often *directly perceive* what others think or feel (Gallagher 2005).



Problem

While we can plausibly directly perceive basic mental states such as feelings and sensations, IT is implausible for propositional attitudes with complex content.

Narrative Practice Hypothesis (NPH)

We are continuously exposed to and engage in various narrative practices from the beginning of childhood. In direct encounters but also in various other situations we are exposed to *stories* about people acting for reasons. Such stories form the basis of our acquisition of the forms and norms of folk psychology (Hutto's 2008).



Problem

The relevant narrative practice relies heavily story telling and thus presupposes language. It either cannot account for or has to downplay basic social understanding in the first year of life.

A multidimensional alternative: The person-model theory (PMT)

We develop different kinds of '*person models*' from ourselves, from other individuals and from groups. These can be captured by two distinctions: (1) *person schemata* (non-conceptual and modular information) vs. *person images* (conceptual and inferential information) and (2) Social understanding of *individuals* and of *groups*.

They differ in inferentiality, have different cognitive demands and are applicable with respect to different mental phenomena depending on the prior relation to the other person and on the context.

2 Person Images

Later in cognitive development we form (typically conscious) conceptual representations of mental and physical phenomena related to a human being (or a group) which essentially involve background knowledge and the construction of narratives. Includes information partly explicitly represented using language.

My person image of my own body is what Gallagher (2005) calls a *body image*.

Applications/Evidence

- 'Theory of Mind': We pass false belief tasks at 4-5 years (Wimmer, Perner 1983) and explicitly represent other's mental states.



- Supporting Intuition: We develop rich and detailed images of our friends and family (but rather impoverished images of strangers)

- Pathological cases: Patients with *Fregoli's syndrome* hold a delusional belief that different people are one single person changing appearance. *Capgras-patients* hold the delusional belief that a close acquaintance has been replaced by an impostor (Davies, Coltheart 2001).



1 Person Schemata

Very early in life (and before we acquire the concept of belief) we develop sensorimotor abilities and basic mental phenomena, realized by non-conceptual representations and associated mainly with individual human beings. They allow for an implicit and immediate unconscious registration of their basic intentions and emotions and are realized by modular processes. My person schema of my own body is what Gallagher (2005) calls a *body schema*.

Applications/Evidence

- Neonatal imitation of facial and manual gestures (Meltzoff, Moore 1977)
- Active emotional engagement as the basis for the experience of the other as *the other* (Reddy 2008)
- *Direct perception* of intentions and emotions exemplified by biological motion detection (Bente et al. 2001)
- Neuroscience: Mirror Neuron System for detecting intentional behavior in others (Rizzolatti et al. 1996).
- Perception of movements as intentional actions even if carried out by geometrical figures (Heider, Simmel 1944).
- Pathology: Children with autism lack these abilities (Hobson 2002, Santos et al. 2008)



3 Stereotypes

We develop *stereotypes* as person models of individuals and groups to minimize cognitive effort when dealing with others, and to socially identify ourselves as in-group or out-group members (Doise, Sinclair 1973, Oakes et al. 1994). Here, we make use of all kinds of sources, especially narrative ones like literature and film, but also art, cliché etc.



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