Neuropragmatics: Mind/brain evidence for communicative intentions.

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Human beings are genetically designed in order to maximize their capacity for social interaction. At birth they already possess complex primitives (like sharedness) which allow them to master communication far beyond other animals' ability.
The most important primitive for communication is *communicative intention*, which may be formally defined (Bara, 2007) as follows:

$$CINT_{A,B}\ p = INT_A\ Shared_{B,A}\ (p \wedge CINT_{A,B}\ p)$$

A has the communicative intention that *p* towards B ($CINT_{AB}$ *p*) when A intends (INT_A) that the following two facts be shared by B and herself ($Shared_{BA}$): that *p*, and that she intended to communicate to B that *p* ($CINT_{AB}$ *p*).
The developmental evidence of communicative intention as primitive is that 9-months-old children perform communication acts like declarative pointing. I.e., they are able to express the intention of sharing an action/object between the self and the other (Tomasello *et al*., 2005).
The neuroimaging evidence consists in a series of fMRI experiments, where we demonstrated that the anterior paracingulate cortex is not necessarily involved in the understanding of other people's intentions per se, but primarily in the understanding of the intentions of people involved in social interaction (Walter *et al.*, 2004). Moreover, this brain region showed activation when a represented intention implies social interaction and therefore had not yet actually occurred. This result suggests that the anterior paracingulate cortex is also involved in our ability to predict future intentional social interaction, based on an isolated agent's behaviour. We conclude that distinct areas of the neural system underlying theory of mind are specialized in processing distinct classes of intentions (Ciaramidaro *et al.*, 2007), among which there is communicative intention with its distinctive features.

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