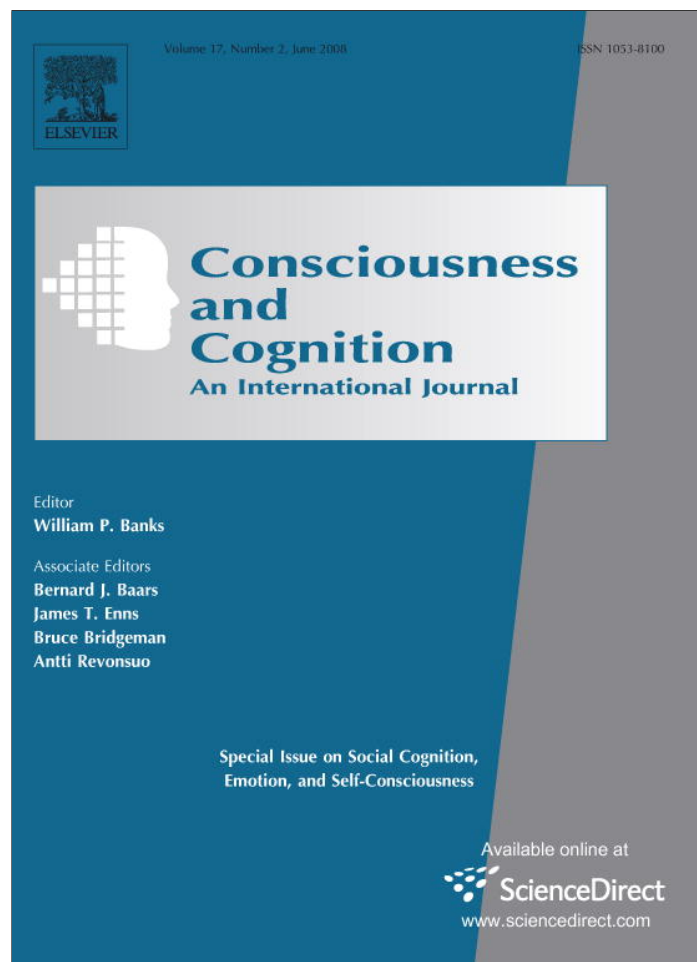


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# Consciousness and Cognition

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## Editorial

### Social cognition, emotion and self-consciousness: A preface

*Social cognition* is one of the key abilities we have to acquire to be successful in social interactions in everyday life. Recent studies from different disciplines show that we have to take phenomena like embodiment, the functional role of emotions and basic forms of mentalizing as well as the intensely discussed theory-of-mind ability into account. The first paper tries to offer a general theoretical framework to account for all these dimensions by distinguishing three levels of cognition: the level of feeling, thinking and social understanding. Besides covering the variety of topics that are relevant for an investigation of social cognition, the wealth of current methodological approaches also needs to be considered. Therefore the volume systematically brings together different perspectives from philosophy, psychology and cognitive neuroscience. The articles are interdisciplinary in many respects: Some articles are written cooperatively by authors of the different subjects that investigate the mind and, furthermore, some articles are approaching a shared research topic from different complementary perspectives. Therefore, we hope that readers will appreciate this volume as a valuable contribution to successful interdisciplinary progress in understanding “social cognition, emotion and self-consciousness”.

In the following we present a short overview both of the organization and the content of the volume: It starts with a theoretical paper from *Synofzik, Vosgerau and Newen* offering a general theoretical framework to investigate the topics that are closely related to social cognition by distinguishing three levels of cognition: feeling, thinking and social understanding. The most important background claim is that we have to distinguish at least three different kinds of mental representations which may be labeled nonconceptual and conceptual representations as well as metarepresentations. Applying this background theory to agency and ownership, the following is entailed: (i) the individual-oriented cognitive dimension of agency and ownership (e.g. feeling of agency and judgement of agency) and (ii) a socio-normative dimension of agency which is usually called responsibility. The theoretical framework is empirically anchored and explained in detail.

The theoretical paper is followed by a series of studies from cognitive neuroscience. *Santos et al.* (group of Kai Vogeley) investigate the attribution of animacy in human observers that is influenced by specific motion parameters of simple geometric figures including directionality, discontinuity and responsiveness. In the study of Abraham et al. (group of Ricarda Schubotz), the so-called theory-of-mind ability is systematically investigated using fMRI: Comparing intentional with non-intentional relational representations (spatial relations), this study demonstrates the involvement of the precuneus, the temporal poles and the medial prefrontal cortex during the processing of intentional representations. In contrast, the anterior superior temporal sulcus and the left temporo-parietal junction are recruited when processing representations that refer to the presence of persons in relational contexts in general. In the TMS-study of *Barrios et al.* (group of Julian Keenan) it was found that TMS by virtually lesioning the medial prefrontal cortex resulted in a disruption of egoistic self-enhancement, while judgments involving moralistic words were not influenced. These data provide further evidence that MPFC is selectively involved in self-enhancement. A further fMRI-study by *Schilbach et al.* (group of Kai Vogeley) investigates the relevance of the *resting state* as a potential neural mechanism for social cognition: Altogether, the findings from neuroimaging studies exploring the neural correlates of resting state or unconstrained cognition as well as those investigating the neural basis of social cognition demonstrate a considerable overlap between task-related deactivations seen in the former and task-related activations seen in the latter types of investigations. The overlap of the neural signatures of resting states and of social cognition thus suggests that human beings have a predisposition for engaging in social cognition as the pervasive and default mode of cognizing to which they return when not faced with a given task.

By the following two papers the research perspective is systematically extended: *John Bickle* argues that social cognition can and should also be investigated on the level of molecular neuro science. He discusses a study concerning *social memory consolidation*, i.e. the process by which labile, easily disrupted short-term memories are converted into more stable long-term memories with similar content. The central claim is that social memory consolidation can be reduced to CREB (cyclic adenosine monophosphate response-element binding protein) activity in ventral hippocampus neurons. In the paper of *Kirsch, Güntürkün and Rose* we find a highly inspiring look at the evolutionary dimension of cognition in general and social cognition in particular: They start with mentioning the standard view that insight is a cognitive feature that is usually

regarded as being generated by the mammalian neocortex, and present only in humans and possibly some closely related primates. Then they show that especially corvids display behavioural skills within the domains of object permanence, episodic memory, theory of mind and tool use that are insightful. Hence, neither is insight restricted to mammals, as predicted from a “scala naturae”, nor is the laminated cortex a prerequisite for the highest cognitive abilities including social cognition.

The remaining papers of the volume are mainly concerned with theoretical discussions of central features of social cognition. A group of three papers focuses on emotions: *Grandjean, Sander and Scherer* argue that componential emotion models, and specifically the so-called Component Process Model (CPM), may be able to account better for the emergence of feelings than a basic emotion account or dimensional models. Furthermore, they advance the hypothesis that consciousness of emotional reactions emerges when lower levels of processing are not sufficient to cope with the event and regulate the emotional process. *Alexandra Zinck* argues from a philosophical perspective (i) that self-referential emotions play a central role for the development of early mentalizing abilities as well as for the acquisition of a theory-of-mind ability and (ii) that one has to account for pre-forms of self-referential emotions that appear at early developmental stages and already exhibit the characteristic structure of full-fledged self-referential emotions but rely on nonconceptual representations. *Slaby and Stephan* try to show why affective intentionality has to be considered in order to understand human self-consciousness. For this purpose they discuss one specific class of affective states, so-called *existential feelings*, and argue that they play a central role for human self-consciousness.

The remaining group of articles focuses on theory formation that are aiming at an adequate understanding of social interaction. *Dan Zahavi's* article connects social understanding to empathy: Employing some key issues found in Scheler's classical discussion of empathy, the article argues that there are basic levels of interpersonal understanding—in particular the understanding of emotional expressions—that are not explicable in terms of simulation-plus-projection routines. *David, Newen and Voegeley* present a detailed review and discussion of the state of the art concerning the neural correlates of agency. This article adds a lot of empirical findings to the frame-setting theory paper with which the volume starts. It is suggested that two different neural correlates should be expected for the feeling of agency, on the one hand, and for the judgement of agency, on the other. A multifactorial and multilevel model of the sense of agency may provide the most constructive framework for integrating divergent theories and empirical findings, meeting the complex nature of this intriguing phenomenon.

In the final target paper complemented by a discussion, *Shaun Gallagher* proposes an account of social cognition that emphasizes intersubjective interactions as key component, and that depends, in part, on a direct perception of the other person's intentions, emotions, and dispositions in their bodily movements, postures, gestures, facial expressions, and contextualized actions. This account is clearly opposed to the standard theory of mind (theory theory, simulation theory) approaches that currently dominate the discussion of social cognition and which posit inferential processes over and above perception. *Raphael van Riel* presents a criticism arguing that, *contra* Gallagher and others, a certain kind of properties, including social properties, are not directly perceptible. To develop his argument he distinguishes the properties of being perceptible in a strong sense and of being perceptible in a weak sense by showing that we can separate an active and a passive part of the perceptual system. Against Gallagher he argues that we may only refer to perceptions of intentions of others in a weak sense of perception which is developed in a framework of *anti-cognitivist Cartesianism*. Finally, Gallagher defends his view against this line of criticism.

Early versions of most of the papers were first presented at an interdisciplinary conference at the Hanse-Institute of Advanced Study in Delmenhorst (Germany) organized by the editors in spring 2007. This conference was the beginning of a series of ongoing interdisciplinary cooperations including the edition of this volume. We want to thank the Volkswagen-Stiftung and the Hanse-Institute of Advanced Study, especially the director Gerhard Roth, who all financially and ideally supported the interdisciplinary endeavour. The peer-review process was managed at the University of Bochum with important organizational support by Robert Schütze. Finally, we would like to thank the main editor of the journal, William Banks, for helpful comments and encouraging support.

Albert Newen  
Kai Voegeley  
Alexandra Zinck  
Universität Bochum, Institut für Philosophie,  
Universitätsstr. 150, 44892 Bochum, Germany

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