Is it normal to be a principal mindreader? Revising theories of social cognition on the basis of schizophrenia and high functioning autism-spectrum disorders

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ABSTRACT

Schizophrenia and high functioning autism-spectrum disorders (ASD) are neurodevelopmental conditions that mainly impair social competence, while general intelligence (IQ) is spared. Both disorders have a strong ancillary role in theoretical research on social cognition. Recently the debate has started to be inflected by embodied and phenomenological approaches, which claim that the standard portrayal of all social understanding as so-called 'mindreading', i.e. the attribution of mental states to others in the service of explaining and predicting their behavior, is misguided. Instead it is emphasized that we normally perceive others directly as conscious and goal-directed persons, without requiring any theorizing and/or simulation. This paper evaluates some of the implications of abnormal experiences reported by people with schizophrenia and ASD for the current debate in cognitive science. For these people the practice of explicit mindreading seems to be a compensatory strategy that ultimately fails to compensate for – and may even exacerbate – their impairment of intuitive and interactive social understanding. Phenomenological psychopathology thereby supports the emerging view that 'mindreading' is not the principal form of normal social understanding.

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1. Introduction

Schizophrenia and autism-spectrum disorders (ASD) present major clinical links. Schizophrenia and ASD are reported to have high co-occurrence (Mouridsen, Rich, & Isager, 2008; Petty, Ornitz, Michelman, & Zimmerman, 1984; Stahlberg, Soderstrom, Rastam, & Gillberg, 2004), especially in people with intellectual disability (ID) (Bradley, Lunsky, Palucka, & Homitidis, 2011; Bradley, Summers, Wood, & Bryson, 2004; Cooper, Smiley, Morrison, Williamson, & Allan, 2007; Ghaziuddin, 2005). They present similar alterations of cognitive functions (Kerns, Nuechterlein, Braver, & Barch, 2008; Sasson, Pinkham, Carpenter, & Belger, 2011), brain regions (Toal et al., 2009), neurotransmitter systems (Murphy et al., 2006; Tarabeux et al., 2011) and genes (Burbach & van der Zwaag, 2009; Carroll & Owen, 2009; Pinto et al., 2010). Schizophrenia, ASD and ID have recently been proposed to be part of a unique group of disorders affecting the neurodevelopment (Owen, 2012).

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Schizophrenia and high functioning ASD are presented as disorders in which the impairment affects mainly social competence and performance, while general intelligence (IQ) is spared. As such, research on social cognition in these disorders may offer a profitable entry point for understanding specific pathogenic mechanisms and clinical peculiarities among all neurodevelopmental disorders and specify a potential target for remediation. At the same time it is thought that, since persons with autism and schizophrenia lack the ability to intuitively understand what a person means by his emotional expression and behavior, understanding these pathological states will allow a wider understanding of human social understanding, including how it develops and works. Of course, there are also crucial differences between these two disorders (Crespi & Badcock, 2008). For example, people with autism tend to be unusually disinterested in others, while people with schizophrenia can become obsessed with understanding others. But what interests us here is that both are forced to compensate for the impairment of their immediate social understanding by engaging in reflective observation, explanation and prediction.

It has long been standard procedure in the cognitive sciences to explain most (if not all) social understanding in terms of underlying 'Theory of Mind' (ToM) mechanisms (e.g. Baron-Cohen, Leslie, & Frith, 1985; Fodor, 1992; Gallagher & Frith, 2003; Premack & Woodruff, 1978). Indeed, the concept of ToM is often used to refer to human social understanding as such, but this simply confuses the target phenomenon to be explained with one kind of hypothetical explanatory mechanism. Although there is still disagreement about the precise nature of these ToM mechanisms, there is a widely accepted consensus that what needs to be explained about social understanding is the capacity for so-called 'mentalizing' or 'mindreading'. Mindreading is typically characterized by at least three relatively distinct cognitive abilities. It can be defined as the ability to *attribute* mental states to the hidden minds of others, to *explain* the behavior of others in terms of their hidden mental states, and to *predict* their future behavior accordingly. We emphasize that in the following we employ the terms Theory of Mind and mindreading in this more restricted theoretical sense, rather than as general designations of human social understanding as such.

It is well known that tests designed to evaluate these specific mindreading capabilities pose significant problems for people with schizophrenia (Sprong, Schothorst, Vos, Hox, & Van Engeland, 2007) and autism (Baron-Cohen, 2000). But what has not been sufficiently problematized is whether these impaired ToM cognitive abilities are the primary *cause* of impaired social understanding, or rather a secondary *effect* of impaired social understanding. The mainstream has focused on the former hypothesis. However, an alternative possibility is that abstract social cognition is mainly derived from embodied social interaction, and that it is this foundation in embodied interaction that is mainly impaired in schizophrenia (de Haan & Fuchs, 2010; Stanghellini, 2009) and autism (De Jaegher, 2006; Klin, Jones, Schultz, & Volkmar, 2003). This hypothesis is coherent with the fact that many people with schizophrenia and high functioning ASD have impaired social interaction skills but normal cognitive abilities.

In what follows we first review the current state of the scientific debate, and then contribute to the ongoing shift of perspective by appealing to the abnormal experiences that are typically reported by persons with schizophrenia and autism. It is hoped that this phenomenological clarification will help to improve the current theory of social understanding, as well as lead to more accurate diagnostic criteria and better care for people with social impairments.

2. The theory of 'Theory of Mind' and mindreading

'Theory of Mind' (ToM) is a popular theory in cognitive science, which claims that the mechanism of social understanding is primarily based on so-called 'mindreading', as we defined it above. Mindreading is often portrayed as the commonsense or 'folk psychological' understanding of other persons, and is presumed to be a defining feature of our social lives:

> Folk psychological prediction and explanation abound in our lives. We engage in it for mundane chores, like trying to figure out what the baby wants, what your peers believe about your work, and what your spouse will do if you arrive home late. (Nichols, 2003)

It is certainly the case that we can engage in mental inference, prediction and explanation of others if the situation happens to demand it from us. But is this kind of situation normally the most pervasive element of how we experience our social lives? For instance, the examples listed by Nichols do not include any situations involving intuitive and immediate social interaction. But even in such situations of real-time interaction, could our capacity for mindreading constitute the primary and default way of how we understand others? Could it do so even in those situations when we are not aware of it? The general scientific consensus answers these questions in the affirmative. For example, Carruthers has recently described the sociality of human beings as follows:

> Human beings are *inveterate mindreaders*. We routinely (and for the most part unconsciously) represent the mental states to the people around us (thus employing metarepresentations–representations of representational states). We attribute to them perceptions, feelings, goals, intentions, knowledge, and beliefs, and we form our expectations accordingly. (Carruthers, 2009, p. 121, emphasis altered)

On this view, social understanding is not primarily based on our perceptual experience of others as persons and our embodied interactions with them, but rather on our cognitively attributing internal mental representations to otherwise opaque and perceptually inaccessible physical bodies. Within this broad scientific consensus about mindreading there has been a dispute about the extent to which the underlying ToM mechanisms are some form of evidence-based theorizing,