How direct is social perception?

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A very common way of approaching the topic of social cognition is to note that our ability to understand, anticipate and respond to others' psychological states is a truly remarkable achievement. After all, according to this idea, perception only gives us access to lines, surfaces, colors, etc., and from this we must somehow infer a world of hidden causes, with other people's psychological states being among the most hidden causes of all. Now, one may take this observation to be just obviously right, or one may regard it is as a harmless rhetorical device. In recent years, however, a number of philosophers and cognitive scientists have expressed the concern that this apparently innocent starting point in fact *debilitates* research on social cognition, because it smuggles in the false assumption that we cannot perceive the psychological states of other people. Although there are substantial differences among the positions espoused by these theorists, they are united in their defense of the central claim that it is possible to *perceive* (at least some of) the psychological states of other people. We will refer to this as the direct social perception thesis (DSP). According to DSP, social perception provides us with some form of (implicit or explicit) awareness or knowledge of (at least some of) the psychological states of others. Expressed in these terms, one may have the sense that DSP is so obviously true that there should be little reason for controversy. But if so, then there is a tension between two seemingly innocent and intuitive ideas: on the one hand, the DSP thesis, and on the other hand, the observation (alluded to above) that we must somehow infer others' psychological states from the low-level information we perceive. This tension raises essential questions that must be formulated clearly in order to pinpoint exactly what is at stake in this debate, where the disagreements lie, and what could possibly resolve them. The aim of this introduction is to articulate these questions and to clarify their relations among each other.

To begin with, it is important to locate exactly where the disagreement between these two seemingly innocent and intuitive ideas lies. In elucidating the mainstream view which proponents of DSP oppose, Bohl and Gangopadhyay (2013) distinguish several versions of what they call the *unobservability assumption* (UA). First of all, UA may be understood as a phenomenological thesis to the effect that one does not experience oneself as perceiving others' psychological states, i.e. that others' psychological states do not (ever?) have the same kind of vividness or experiential presence as colors and shapes. Against *this* version of UA, phenomenologists might urge that perceiving someone's sadness, for example, is a qualitatively different experience from merely believing that they are sad, and that this is a distinction to which we should do justice. Second, UA may be interpreted as a metaphysical thesis stating that psychological states cannot be perceived because they are immaterial (implying a naïve dualism that few would want to endorse), because they are abstractions, or because they are brain states hidden within the skull. Third, it may be read as an epistemological thesis to the effect that perceptual experiences do not ground judgments about others' psychological states, at least not without the help of inference and background knowledge. Finally, UA may be understood as a psychological thesis about the processes by which we come to ascribe psychological states to others – i.e. that these are not perceptual processes. A common response on the part of mainstream approaches, however, has been to argue that even if we do perceive (some of) others' psychological states, we still need to account for how this is achieved, and mainstream accounts of mindreading are attempts to do just this. In this vein, Herschbach (2008), Michael (2011) and Lavelle (2012) have all argued that mindreading approaches offer accounts of the *subpersonal* inferential processes that underlie psychological state ascriptions. A first cluster of questions, then, is just what version of UA is affirmed or presupposed by what approach.

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A second cluster of issues surrounds the conceptualization of the relationship between perception and cognition. When proponents of DSP point out that mainstream approaches appeal to inferences or other apparently cognitive processes, and treat this as evidence that mainstream approaches affirm UA, they seem to affirm the idea that perception does not involve inferences. The argument appears to be:

1. Proponents of mainstream (i.e. mindreading) accounts think inferences are necessary for psychological state ascription.
2. Perception does not involve inferences.
3. Proponents of mainstream (i.e. mindreading) accounts think that perception is not sufficient for psychological state ascription.

But proponents of mindreading approaches can and do reply that perception involves unconscious inferences, which may or may not be modular, and that some account must be given of these inferences. And indeed, the (not uncontested) mainstream position in cognitive neuroscience is that perception does involve (Helmholtzian) inferences. Moreover, the increasingly influential Bayesian Predictive Coding framework postulates inferences at multiple hierarchical levels within perceptual systems (Friston, 2012; Hohwy, 2013, De Bruin & Michael, in preparation). Nevertheless, proponents of DSP are right to demand that anyone who postulates subpersonal inferences within perception should offer some principled criteria for referring to psychological/neural processes as inferences.

Now, although DSP theorists resist the notion that perception involves inference, they do think that perception involves some sufficiently sophisticated processes to generate awareness of others' psychological states – that is the whole point of DSP. They have occasionally expressed this view by saying that perception is not dumb but smart (Gallagher, 2008). So proponents of DSP must give some account of these processes, and they must also give reasons for rejecting the characterization of these processes as inferential.

The suspicion may arise at this point that the issue of whether the perceptual and other cognitive processes leading to psychological state ascriptions or to awareness of others' psychological states are inferential is an empty terminological dispute. Moving forward then, it seems productive to look more closely at the perceptual processes, and to consider in what ways they might relate – or not relate – to specific cognitive processes and capacities, such as attention, working memory, conscious awareness and conceptual knowledge. In order to pursue this question in a fruitful manner, it is necessary to delineate the scope of the DSP thesis, and to specify just what psychological states one is talking about. In general, proponents of DSP seem to be paying closest attention to basic emotions, presumably because these states are good candidates for being perceptible. But it still warrants the question to what psychological states different versions of DSP apply. Only to basic emotions? To emotions in general? To some other kinds of psychological states, such as (some) intentions? To some kinds of beliefs or proto-beliefs (e.g. registrations in the sense of Butterfill & Apperly, 2013)? Perhaps to some attitude types (e.g. fear) but not to the intentional objects of those attitudes (e.g. fear of losing one's job)? There is some research suggesting that emotion-specific information is extracted from faces, bodies and voices, in early vision (before 100 ms), even when the stimuli are masked, or when the subjects are blindsighted (De Gelder, 2006, 2009; Tamietto et al., 2009). This may motivate the suggestion that the visual system is specialized for the perception of these emotions, and that emotional cues do not need to be extracted afterwards – i.e., after the perceived shapes and colors are integrated into faces and bodies. In other words, this body of research gives us reason to suspect that some of the steps in emotion perception that one would expect to be inferential turn out to be non-inferential after all. A similar line of thought may be developed for other psychological states, such as intentions in action, which can be identified in point-light displays (Johansson, 1973; Pacherie, 2005; Runeson & Frykholm, 1983), and which at least sometimes are reflected in perceptibly different kinematics (Manera, Shouten, Becchio, Bara, & Verfaillie, 2010). Here again it seems plausible that the identification of the relevant states does not depend upon the prior construction of a coherent body and/or face representation, which is then supplemented with the right amount of background knowledge and appropriate inferences.

This raises interesting questions about just what features of face or body stimuli are picked up on at this early stage, and whether the brain areas that pick up on emotion information from these different sources are overlapping or integrated instead. One may also wonder whether the perception of inaminate shapes that are similar to the postures of sad or angry or fearful bodies may trigger these processes. Another relevant question concerns the extent to which these processes are influenced by top-down processes, such as relevant contextual information about the kind of emotion a person is likely to have. In this connection it is interesting to consider Teufel, Fletcher, and Davis (2010) work on "perceptual mindreading": they found, for example, that participants' beliefs about whether an agent's sunglasses were opaque or transparent modulated the effect this agent's gaze direction had on their spatial attention. This clearly suggests that contextual information can influence low-level social perception. But how does it do so? What role does contextual information play in priming attention sets and responses profiles, and in learning? According to Bayesian Predictive Coding approaches, inferences need not occur in online perception as long as there is no prediction error. However, they most certainly are necessary in *generating* predictions and *revising* them in the face of prediction error (Friston, 2012; Hohwy, 2013; De Bruin & Michael, in preparation).

It is important to note that, at least for some proponents of DSP, the real issue here is precisely not what processes contribute to generating representations or judgments about others' psychological states. Indeed, drawing upon enactivism and/or dynamical systems theory, they argue that we often interact fluidly and appropriately with others without having to represent their psychological states (Kiverstein, 2011). Indeed, given that these general frameworks often deny that the brain

performs any inferences or represents anything at all, the claim that social perception does not involve inferences or representations would be true simply because perception in general does not involve any inferences or representations. But if this is the case, then why should one bother arguing for DSP? Is social perception somehow even more direct than perception in general? Does social perception involve responses in some way that is different from perception in general? If so, this would highlight the importance of considering what role action and the motor system play in social perception.

In particular when thinking about enactivism, the question arises how different versions of DSP relate to each other. For example, while enactivist approaches are often construed as radical alternatives to mainstream accounts of mindreading, one might also entertain the possibility of a more moderate approach combining insights from enactivism with accounts of mindreading. Thus, perhaps enactivism gives a good account of some low-level responses, which do not require inferences (in some specific sense) or which are shielded from whatever cognitive process one is interested in. But perhaps, nevertheless, one's registration of one's own initial, low-level response to another person's expression of, say, fear, might make one aware of that person's fear. Or, when we consider epistemological versions of DSP, initiating a particular response to another person's expression of fear might be part of what it is like to see the expression as an expression of fear, and thus ground a corresponding judgment. This conjecture raises the question whether people with affective blindsight can learn to monitor their responses to others' emotions, and to use those responses as a source of information for judgments about others' emotions.

So, to sum up, some central questions that we hope this special issue will help to illuminate:

1. What does the unobservability assumption assume and who assumes it?
2. In claiming or in denying that psychological states can be perceived, what does one mean by perception and how does one conceive of its relation to cognition?
3. What is the scope of mental states that are perceptible?
4. What perceptual, affective, motor, and/or cognitive processes go into identifying instances of perceivable psychological states, and how are they related to each other?
5. To what extent is DSP compatible with Bayesian Predictive Coding?
6. What is the role of context in perceiving psychological states?
7. How do epistemological, phenomenological, enactivist and psychological versions of DSP relate to each other?

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