Seeing Subjectivity: Defending a Perceptual Account of Other Minds

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1. Introduction

The problem of other minds has a distinguished philosophical history stretching back more than two hundred years. Taken at face value, it is an epistemological question: it concerns how we can have *knowledge* of, or at least *justified belief* in, the existence of minds other than our own. In recent decades, philosophers, psychologists, neuroscientists, anthropologists and primatologists have debated a related question: how we actually go about attributing mental states to others (regardless of whether we ever achieve knowledge or rational justification in this domain). Until the mid-nineties, the latter debate – which sometimes goes under the name of the "mindreading" debate – was characterized by a fairly clear-cut opposition between two theoretical outlooks: "theory-theory" (TT) and "simulation theory" (ST). Theory-theorists typically argued that we attribute mental states to others on the basis of a "theory of mind" that is either constructed in early infancy and subsequently revised and modified (Gopnik 1996), or else is the result of maturation of innate mindreading "modules" (Baron-Cohen 1995). Simulation theorists, on the other hand, held that it is by creating simulated "pretend states" in ourselves that we understand the mental states of others (Goldman 1995; Gordon 1995).

Recently, a number of theorists have suggested another explanation of our understanding of others as having mental states – an explanation that, at least prima facie, seems very different from the TT and ST paradigms. Drawing on the approach to other minds defended by classical phenomenologists such as Max Scheler (1954: 238–64) and Maurice Merleau-Ponty (2002: 214–16, 403–25), recent participants in the mindreading debate have maintained that we often *see*, or perceive in some other modality, that another is in the grip of a particular emotion, say. In other words, the processes involved in our detection of others' emotions and other mental states are often *perceptual* processes that are not supplemented by any extra-perceptual cognitive mechanisms (e.g., explicit inferential processes, conscious simulation routines, or the like). Though increasingly influential, this "direct perception" (DP) approach to social cognition has faced a number of criticisms (cf. Goldman and de Vignemont 2009; Hershbach 2008; Spaulding 2010). One recent criti-

cism, developed by Pierre Jacob, is that by denying the widely-held assumption that most, if not all, of another's experiences and psychological states are unobservable, direct perception advocates are forced to embrace a kind of crude behaviorism (Jacob forthcoming). This is because another's bodily expressions and various body-related traits—posture, movement, facial, hand, and whole-body expressions, etc.—either *constitute* their cognitive and emotional states, or they do not. If they do *not*, then we don't ever truly perceive another's mental states, only their behavioral expression. However, if they *do*—if emotions, for example, are identified with patterns of observable behavior like smiling, forehead-wrinkling, etc.—it seems that the DP advocates have backed themselves into a behaviorist corner, which brings not only a cluster of well-known philosophical objections but, additionally, the difficulty of reconciling behaviorism with the phenomenologists' intention to preserve the centrality of experience when accounting for various mental phenomena.

   This paper provides a general defense of the DP approach to "mindreading" and offers a response to the behaviorism objection. More precisely, we aim to do two things: First, we remove a number of ambiguities and obscurities surrounding the DP proposal. Second, we defend a DP approach and show how bodily expressions might be said to be proper parts of (some) mental phenomena. This, we suggest, corroborates the phenomenologists' perceptual account of "mindreading"; and it does so, importantly, without resorting to behaviorism.

2. The Ambiguity of "Expression"

2.1. The Direct Perception Idea

According to classical phenomenologists, we sometimes have a direct perceptual awareness of another's subjectivity—that is, an awareness of another person *as a person*, as a first-person perspective harboring their own cognitive and affective states.[1] Husserl, for instance, urges that "we intuitively ascribe to the other person his lived experiencing, and we do this completely without mediation and without consciousness of any impressional or imaginative picturing" (Husserl 2006, p.84). Similarly, according to Scheler, "that experiences occur there [in the other person] is given for us *in* expressive phenomena – […] not by inference, but directly, as a sort of primary 'perception'. It is

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[1]   This is not to imply that all phenomenologists held identical views on intersubjectivity. See Zahavi (2001).

in the blush that we perceive shame, *in* the laughter joy" (Scheler 1954: 10). Finally, Merleau-Ponty argues that, within the experiential immediacy of my perception of another's mental life, "there is nothing here resembling 'reasoning by analogy'"; rather, "between this phenomenal body of mine and that of another as I see it from the outside, there exists an internal relation which causes the other to appear as the completion of a system" (Merleau-Ponty 2002: 410).² Such direct social perception has both an *epistemic* role, in that it allows us to understand another's thoughts, feelings, motives, and intentions, as well as anticipate future behavior; and it also harbors a *social* function, in that it motivates communicative engagements. The crucial point, however, is that this approach rests on the claim that another's mentality is, quite often, perceptually available within their patterns of expressive behavior. We literally see minds in action.

Drawing upon the classical phenomenological discussions, a number of contemporary theorists have recently defended a similar DP view of social cognition (Gallagher 2008; Gallagher and Hutto 2008; Gallagher and Zahavi 2008; cf. Hobson 2008, Reddy 2008). According to DP advocates, perception of others is rich with social information. This is because "we have a direct perceptual grasp of the other person's intentions, feelings, etc." within the immediacy of their context-sensitive, expressive actions (Gallagher 2008: 535). This "smart" perception enables us to grasp what they're thinking and doing without the addition of some extra-perceptual cognitive mechanism. Accordingly, such socially smart perception is *direct* in that the emotions, intentions, etc. of others are, in some sense, manifest in my visual perception: I access them *immediately* without having to appeal to any sort of mediating "mindreading" mechanism (again, explicit theories, simulations, etc.). As Shaun Gallagher concludes, this means that "for the most part, in most of our encounters in everyday life, direct perception delivers sufficient information for understanding others" (Gallagher 2008: 540).³

2   Merleau-Ponty writes elsewhere that "We must abandon the fundamental prejudice according to which the psyche is that which is accessible only to myself and cannot be seen from the outside. My 'psyche' is not a series of 'states of consciousness' that are rigorously closed in on themselves and inaccessible to anyone but me. My consciousness is turned primarily toward the world, turned toward things; it is above all a relation to the world. The other's consciousness as well is chiefly a certain way of comporting himself toward the world. Thus it is in his conduct, in the manner in which the other deals with the world, that I will be able to discover his consciousness" (Merleau-Ponty 1964: 116–117).

3   While we're sympathetic to Gallagher's more general point, this claim strikes us as overstating the matter somewhat. While it is likely the case that perception often delivers sufficient information for understanding others, there are surely many more occasions when it does not (e.g., when interacting with strangers in an unfamiliar context, trying to ascertain an-

2.2. Varieties of Expression

While we are sympathetic to the idea of smart social perception, we never-
theless suggest that the thesis remains ambiguous at a crucial juncture and
thus requires further clarification. Additionally, we argue that clarifying this
ambiguity helps to further clarify how perception plays the crucial epistemic
role that it does in understanding another's mental life. Where does this
ambiguity lie? In the way that the term "expression" tends to be deployed
when describing how another's actions serve as our point of access to their
"inner" mental life.[4] Max Scheler characterizes our face-to-face encounter
with another person as the encounter with a genuinely embodied mind, that
is, the other considered as a psycho-physical "expressive unity" (*Ausdruckssein-
heit*) (Scheler 1954: 218, 261). Defenders of the direct perception view tend to
adopt a similar way of speaking. For example, we are told that "[e]xpression
is more than simply a bridge that closes the gap between inner mental states
and external bodily behavior. In seeing actions and expressive movements of
other persons, one already sees their meaning. No inference to a hidden set of
mental states is necessary. *Expressive behavior is saturated with the meaning of the
mind; it reveals the mind to us*" (Gallagher and Zahavi 2008: 185, our emphasis).
While helpful in clarifying the core supposition of the direct perception view,
this formulation remains somewhat ambiguous. This is because there are at
least three ways of understanding how it is that the gestures, facial expressions,
and behavior of another can be expressive of their mental life.

   First, it might be the case that another's behavior expresses their inner
mental life in the sense that patterns of behavior are *caused* by various men-
tal phenomena—my reaching for a beer is caused by my desire to drink a
beer and my intention to grab the nearby bottle; my frown is caused by my
confusion over my partner's ambiguous utterance—but importantly, mental
phenomena remain hidden *behind* the behavior they cause (and which are
thus in some sense *secondarily* expressive of them). According to this inter-
pretation, behavior is not constitutive of mental phenomena. Rather, the
former is the latter's causal output; behavior always back-references assorted
causally-antecedent mental phenomena standing behind it. This understand-

   other's hidden motives, etc.). This is nevertheless consistent with the claim that, even within
   these contexts, we have direct perceptual access to parts of another's mentality, and that
   the content of this perception is a crucial part of our basic social understanding. It simply
   acknowledges that we often utilize additional extra-perceptual strategies to flesh out our
   social understanding even further.

4   Joel Smith (2010: 748) also makes this point.

ing of "expression" preserves the commonsense Cartesian assumption that mental properties are experientially inaccessible to everyone but the subject whose properties they are. In perceiving another's behavior, we perceive the *effects* of their mental life but we never perceive mental phenomena in and of themselves; the latter remain exclusively intracranial entities. Perceiving the joy "in" the smile, on this sort of account, is to interpret the smile in terms of its assumed cause – viz. joy. But if so, our access to another's mental life is fundamentally inferential, and not perceptual. We must infer the existence of causally-antecedent mental phenomena when perceiving expressive behavior since we cannot in principle perceive another's mental life directly. This inference is typically taken to be analogical: I infer by analogy that another's behavior (which I can perceive) must be motivated by mental phenomena similar to my own (which I cannot perceive), since, in my own case, mental phenomena (experiencing anger) reliably cause various kinds of behavior (frowning and clenching my fists).[5]

This analogical account of social cognition is clearly not what defenders of DP want to endorse. Moreover, this account is plagued by a number of well-known philosophical problems, which we won't rehearse here (see, e.g., Gallagher and Zahavi 2008: 181–183; Ryle 1949: 53–54; Scheler 1954: 238–264).

A second alternative—call this the "co-presence thesis" (CP) of social cognition—is to claim that, in perceiving another's expressive behavior, associated mental phenomena are somehow experientially co-present (cf. Smith 2010). CP is motivated by the more general phenomenological observation that what we *experience* often outstrips what we *perceive*. For example, when we perceive a tomato, we experience (it is argued by some) the whole tomato, that is, the tomato as a solid object in its three-dimensional density, including both its front as well as its backside. We don't experience mere *aspects* of the tomato. Although the tomato is, of course, perceptually present from a particular perspective (i.e., our perspective as an embodied perceiver standing in a determinate spatial relation to the tomato)—and therefore the tomato is, in a sense, perceived *aspectually*, as presenting only part of itself relative to our spatial position—it is nevertheless experienced *in its totality*, as, once again, a solid three-dimensional object with both a front and a backside. This is a fact about the phenomenology of perceptual consciousness. In this sense

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5   Not just philosophers find this idea appealing. Francis Crick, for example, writes: "Strictly speaking, each individual is certain only that he himself is conscious. For example, I know that I am conscious. Because your appearance and your behavior seem to me to be rather similar to mine, and in particular because you assure me that you are indeed conscious, I infer with a high degree of certainty that you, too, are conscious" (Crick 1995: 107).

are hidden parts of the tomato (as with other solid opaque objects) *amodally* co-present to perceptual consciousness (Noë 2009).[6] Hidden parts are experientially co-present alongside visible parts even if they remain perceptually absent.

Analogously, although we only ever *perceive* another's behavior (e.g., a frown or smile), we nevertheless *experience* associated mental phenomena (e.g., their misery or happiness) as amodally co-present. Mental phenomena remain intracranial phenomena. But crucially, they are, in some sense, experientially accessible, given via their bodily expression. CP is thus consistent with DP's claim that we enjoy experiential access of one sort or another to another's mentality. And it is also consistent with what we might term the "transcendence intuition": the commonsense intuition that another's mental life is in some important sense at least partially transcendent to our experience of it.

There are, however, several difficulties with CP. For the sake of space, we mention just one. As Husserl notes, perceiving another's mental life is not analogous to perceiving the backside of three-dimensional opaque objects like tables and tomatoes. With this latter experience, we can move our head, body, or change our entire position by walking around the object so that the occluded side is eventually experienced directly. Experiences "of this sort involves the possibility of verification by a corresponding fulfilling presentation (the back becomes front)" (Husserl 1960: 109). But clearly this is not the case with another's mentality. Peering more closely, moving around, or even manipulating another's head will never bring their mentality into direct view—at least in a way analogous to solid opaque objects.[7] This sort of perceptual "verification must be excluded a priori" (Husserl 1960: 109). So, the mentality of another can never be anything more than amodally co-present within expressive behavior. Given this conclusion, it's not clear that DP advocates want to accept CP since it seems to contradict the directness of our experiential access to another's mentality. Our amodal experience of another's mentality, according to CP, is phenomenally degraded—it is perceptually indirect—in contrast to our direct perception of their behavior.

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6   Husserl puts the point this way when he writes that, "there belongs to every external perception its reference from the "genuinely perceived" sides of the object of perception to the sides "also meant"—not yet perceived, but only anticipated and, at first, with a non-intuitional emptiness (as the sides that are "coming" now perceptually)…Furthermore, the perception has horizons made up of other possibilities of perception, as perceptions that we could have…if, for example, we turned our eyes that way instead of this, or if we were to step forward or to one side, and so forth" (Husserl 1960: 44). A similar idea motivates Noë's (2004, 2009) sensorimotor account of perceptual consciousness.

7   This objection will be qualified somewhat below.

Joel Smith suggests a way for CP to respond to this objection. The co-presented mentality can be confirmed, not in presentations of the mental as such, but in "further presentations of behaviour" (Smith 2010: 740–1). The problem with this reply is that it only seems to underscore the fact that the mental states of others, according to CP, really *are* out of reach of our perceptual experiences. All we ever really *see* – have *presented* to us – is behavior. The mental, though somehow co-presented, is never really *given* as such. This seems to raise serious doubts as to whether CP ultimately makes any advance beyond more traditional accounts, according to which the mental states of others are "unobservable" and thus must be inferred.

A third option is to speak of "expression" not in a causal but rather a constitutive sense. This is the most philosophically radical of the three options and initially, perhaps, the least plausible. Additionally, this is the option that Jacob suggests leads to an unsavory behaviorism. Taking "expression" in a constitutive sense is the idea that certain bodily actions are expressive of mental phenomena in that they actually make up proper parts of some mental phenomena. In other words, some mental phenomena have a hybrid structure: they straddle internal (i.e., neural) and external (i.e. extra–neural, gross bodily) processes. When we perceive certain forms of behavior and expressive actions, we quite literally perceive aspects of some mental phenomena.

So which option do DP defenders embrace? Their language of directly perceiving another's mentality would seem to suggest the third option; however, they remain ambiguous on this point. To return to an earlier quote, we are told that "[e]xpressive behavior is saturated with the meaning of the mind; it reveals the mind to us" (Gallagher and Zahavi 2008: 185). But just as a towel can be saturated with water while still remaining distinct from it, so, too, can behavior be saturated with mentality while nevertheless remaining distinct from the mental phenomena it expresses (even if the latter is amodally co-present). So, embracing either of the first two options—and again, it's clear that the first option is a non-starter for DP defenders—means that all we every really perceive (i.e., *directly*) are *bodily features*, that is, patterns of expressive behavior that suggest, or hint at, mental phenomena but which fail to give us the phenomena in a genuinely direct sense (i.e., as anything other than amodally co-present).

In sum: we argue that DP advocates ought to explicitly embrace a constitutive sense of "expression" in option three. In what follows, we offer some theoretical and empirical reasons for embracing this sense of expression and argue that, moreover, this third option doesn't necessarily entail a commitment to phenomenology-rejecting behaviorism. Additionally, we argue that

this third option lends insight into how directly perceiving aspects of another's mentality in their expressive behavior can secure non-inferential knowledge of others' mental states the way Scheler and Merleau-Ponty intended.

3. Does Direct Perception Entail Behaviorism?

3.1. The Blind Alley of Behaviorism

Jacob argues that DP advocates collapse the distinction between expressive behavior and the inner psychological states causally motivating this behavior (Jacob forthcoming: 18). This conflation results from DP's insistence that we directly perceive aspects of another's mental life within their expressive behavior, which, to repeat, generates the following dilemma: bodily expressions and various body-related traits—posture, movement, facial, hand, and whole-body expressions, etc.—either *constitute* another's cognitive and emotional states, or they do not. If they do *not*, we don't ever perceive another's mental states with the immediacy DP advocates say that we do; rather, we only see their behavioral expression. Thus, we don't have unmediated perceptual access to another's mental life. As we have seen, this seems to be the fate of DP's close cousin, CP. However, if bodily expressions *do* constitute another's cognitive and emotional states—if emotions, for example, are identified with patterns of observable behavior like smiling, forehead-wrinkling, etc.—it seems that the DP advocates have endorsed behaviorism.

   Though he doesn't spell this out explicitly, Jacob assumes a clear-cut (and admittedly, commonsense) distinction between mental states and their behavioral expression. After all, it seems that, in many cases, I can have an experience (e.g., anger) in the absence of bodily expression (e.g., I maintain a stoic countenance to avoid betraying my anger around my co-workers). The latter can clearly be decoupled from the former. Nevertheless, Jacob insists that "[it] is uncontroversial that an individual's goal-directed or intentional behavior betrays the goal or intention that caused the agent's executed movements. An individual's expressive behavior can also be said to betray the emotion or affective state that caused the agent's overt movements" (Jacob forthcoming: 18). Often one's overt behavior gives a clear indication of the psychological states behind it. But a token piece of behavior is not identical to some token psychological state. Presupposing this clear-cut distinction between inner psychological states and overt behavior is, Jacob says, part of the "standard view" of mind and social cognition, according to which mindreading results

from inferential processes based on the observation of behavior to the postulation of unobservable psychological states (Jacob forthcoming: 18).[8] But in arguing that expressive behavior *constitutes* mental events and process, DP proponents seem to advocate a reduction of psychological states *to* expressive behavior—which, though he doesn't elaborate this claim, is offered by Jacob in such a way that it presumably is meant to constitute a *reductio* against the DP position.

Additionally, this behaviorist view would seem to generate another problem for the phenomenologist. No matter what sort of behaviorism one embraces—methodological, psychological, or analytical/philosophical (Graham 2010)—the basic tenet of behaviorism is that mental terms and psychological activity can ultimately be given behavioral explanations. This picture clearly obviates the need to appeal to first-personal, introspectively-accessible phenomena when describing mental events, states, and processes. However, phenomenology is generally taken to be a project of rigorously describing mental events, states, and processes—the structures of subjectivity—*from the inside*. Put differently, phenomenology in its orthodox construal is concerned with carefully describing things as they appear, within unique modes of intentional presentation, *to* consciousness.[9] By eliminating talk of inner mental events or structures, however, behaviorism jettisons the very data that phenomenology is primarily concerned with investigating. So, by embracing behaviorism, phenomenologically-motivated DP advocates have undercut their own usefulness and rendered their conceptual tools explanatorily irrelevant.

8   Likewise, in a recent handbook of social psychology, Nicholas Epley and Adam Waytz write that "[p]eople do not have direct information about others' mental states and must therefore base their inferences on whatever information about others' mental states they do have access to. This requires a leap from observable behavior to unobservable mental states that is so common and routine that people often seem unaware that they are making a leap" (Epley and Waytz 2009: 499). This statement reflects a widely-held, and generally unargued-for, presupposition informing a great deal of social cognition research. Interestingly, Epley and Waytz fail to even consider the possibility that the reason people are often unaware of making an inferential "leap" of the sort they describe is not due to the habitual nature of the process but rather the fact that, very often, there is no leap being made in the first place.

9   This is not to imply, however, that, despite persistent claims to the contrary, phenomenology is committed to naïve introspection as a descriptive methodology (cf. Dennett 1987). See Moran (2000: 14–15), and Gallagher and Zahavi (2008: 19–21).

3.2. Why Perception?

Yet why should one even suppose that it is correct to say that, in some cases, we are *perceptually* aware of other people's mental states? Why couldn't we simply be relying, as Epley and Waytz suggest (see note 9), on very fast, habitual inferences "so common and routine" that we generally fail to notice them? For starters, it certainly *seems* to us as if we sometimes are perceptually aware of others' mental states. This is a point that phenomenologists such as Scheler and Merleau-Ponty have consistently emphasized. In the famous words of Scheler,

> we certainly believe ourselves to be directly acquainted with another person's joy in his laughter, with his sorrow and pain in his tears, with his shame in his blushing, […]. If anyone tells me that this is not 'perception', for it cannot be so, in view of the fact that […] there is certainly no sensation of another person's mind nor any stimulus from such a source, I would beg him to turn aside from such questionable theories and address himself to the phenomenological facts. (Scheler 1954: 260)

To see that Scheler may have a point here, pick your favorite sample – the one that strikes you as the clearest expression of some particular emotion – from Ekman and Friesen's classic collection of pictures of facial affect. The face in the picture will strike you, in a very immediate way, as happy, sad, angry or whatever (depending on the picture you've selected). Now turn the picture upside down. The expression of the face being vivid in your memory, and your knowledge that it is the very same picture that you looked at a minute ago, will no doubt help you to retain a firm grasp of the emotion expressed. Yet something fundamental is changed. In "seeing" the face as sad, you may have to rely a little more on explicitly noting the curve of the mouth, the angles of the eyebrows, and so on, and on your knowledge of what such curves and angles typically mean. Your perception has now become a little less "smart", and you need to rely more on knowledge and inference than you did when the picture was upright.[10]

Yet the point remains that we *could* be relying on inference even in the

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10 Your perception remains relatively smart, of course. **You don't just see meaningless con-**tours; you see a human face looking at you, perhaps the face of a woman, with her mouth curved as if she might be sad, etc. The best example of a really "dumb" social perception (which is obviously not to say that the *perceiver* is in any way dumb or unintelligent) that we have come across is that of Dr. P. in Oliver Sacks' *The Man Who Mistook His Wife for a Hat* (Sacks 1985: 9–24).

upright case. Since presumably we are much more accustomed to viewing faces the right way up, these inferences are simply much more common and routine, and hence correspondingly difficult for us to notice, than the inferences we make in upside-down cases. Is there any reason to think that in the former sort of case, we may actually be perceiving rather than inferring? We think there is.

Inferences are usually understood to be characterized by what Zenon Pylyshyn terms "cognitive penetrability" (Pylyshyn 1999: 343). That is to say, when you infer that *p* on the basis of some set of premises or assumptions, your reaching the conclusion *p* is such that had you had different information pertinent to the matter at hand, this might have "penetrated" to your reasoning and made you reach a different conclusion. It would in principle be possible for you to inhibit concluding that *p* if, for example, you had conclusive evidence against *p* being true. While very habitual and routine inferences may be difficult to block, this is hardly impossible. Now, according to Pylyshyn's influential account, it is characteristic of at least what he calls "early vision" that it is "cognitively *im*penetrable" (ibid.). Simply put, what you see is not affected by any non-visual information that you may have. Take the famous Müller-Lyer illusion, for example. The two lines strike you as unequal in length. But once you have measured them, you will know (and hence believe) that they are the same length. However, what is striking is that you still see one line as longer than the other. In other words, what you know has no effect on what you see. Needless to say, you are no longer inclined to *judge* that one line is longer than the other; but that does not change the fact that one line *looks* longer.

Now return to your Ekman-Friesen picture, this time seen with the right side up. Suppose it is a picture of an angry face, complete with exposed teeth, a wrinkled forehead, and the characteristic angry glare. Do you see a wrinkled forehead etc., and *infer* that the person is angry, or do you see not only that the person's forehead is wrinkled, but also, and perhaps even primarily, that the person is angry? In view of the point we have just made about the cognitive impenetrability of vision, the perceptual model is surely not implausible. Obviously, you can refrain from judging that the person you see is angry—just as you can refrain from judging that one Müller-Lyer line is longer than the other. If you know that the person in the picture is an actress instructed to look angry, you will most likely not believe that she is angry. But the crucial point is that this does not make the angry *look* go away. In other words, the person in the picture will look angry to you, regardless of the (non-visual) information you have about

her.[11] If so, then cognitive impenetrability seems to apply to at least some cases of detecting another person's emotion by visual means. In cases of this sort, therefore, it seems reasonable to say the emotion in question is detected *perceptually*, not inferentially. You see the person as angry(-looking), even when you have conclusive evidence to the contrary. It is hence not an inference that leads you to ascribe anger to this person: you *see* that "anger" is the right term to apply, although you may not – depending on your other, non-visual information – end up *judging* or *believing* that the person is angry.[12]

3.3. The Hybrid Mind in Action

The considerations canvassed in the previous subsection not only support DP, however. They are equally conducive to CP. Amodal co-presentation of the sort invoked by CP is cognitively impenetrable: even when you know for a fact that you're just looking at lines drawn on a sheet of paper, it may still look to you as if there is a square partially occluding a disc. So is there any evidence which supports DP's stronger claim – the claim that emotions and other mental states may in fact *themselves* be visible? We think there is, and in this subsection we will review some of it.

Moebius Syndrome is a rare condition characterized by congenital facial paralysis. People with Moebius, in other words, are incapable of facially expressing emotion. A recurrent theme in the narratives of those with Moebius

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11 This claim needs to be modified somewhat, as we believe there are no clear-cut borders between the expression of anger and certain other negative emotions that are closely related to anger. Depending on the information you have, the person in the picture may strike you as vengeful, hateful, or perhaps even disgusted (though we are less certain about this). Yet all these are variations of the fundamental hostility expressed by the person. And if, as we strongly suspect, there is no information you could be given which would make the person *look* happy, say, then the point about cognitive impenetrability remains intact.

12 Of course, in everyday social encounters, we don't perceive static snapshots of emotions but rather dynamic, temporally-extended patterns of expressive behavior, which provide us with even more fine-grained social information than can be conveyed by mere pictures of faces (e.g. nuances of movement—such as intensity and direction of gestures—and vocal utterances; a broader context that situates these movements and utterances, giving them coherence and meaning, etc.). In other words, the cross-modal array of socially salient information available for perception is even greater than when simply viewing photographs of emotions, making our perceptual access to other's mentality significantly richer than in the picture example. For a nice study highlighting the role of facial dynamics in helping perceivers detect others' emotions, see Ambadar et al. (2005).

Syndrome is the sense of diminished affect somehow connected to their facial paralysis (Cole 2010). One individual says that

> I have a notion which has stayed with me over much of my life—that it is possible to live in your head, entirely in your head…I sort of think happy or I think sad, not really saying or recognizing, actually feeling happy or feeling sad…These feelings are there but they are probably reduced. I've often thought of myself as a spectator rather than a participant (Cole 1999: 308).

Another individual with Moebius reports that she learned to mimic gestures she observed while on holiday in Spain, which brought about a corresponding intensification in the phenomenology of her emotional experience (Cole and Spalding 2009: 154). Other individuals with Moebius report adopting alternative strategies of embodied expression—prosody, gestures, and verbalization, along with energetic artistic activities such as painting, dancing, or playing the piano—to scaffold their emotional experience, recalibrate its phenomenal character, and facilitate social sharing of the emotion (Rives Bogart and Matsumoto 2010).

These narratives are supported by studies indicating that the manipulation of expressive behavior produces a corresponding change in emotional phenomenology (Laird 2007). Many studies have found that when subjects are induced to adopt specific facial expressions (grimacing, frowning, etc.) or posture, they report experiencing the corresponding emotions (disgust, anger, etc.) (cf. Duclos and Laird 2001; Duclos et al 1989; Edelman 1984; Flack et al 1999; Kellerman and Laird 1982; for extensive review, see Laird and Bresler, 1992). Other research has found that (1) adopting emotion-specific facial expressions and postures influences preferences and attitudes, and (2) inhibition of bodily expression leads to diminished emotional experience, as well as interference in processing emotional information (Niedenthal 2007). This latter result is further supported by evidence suggesting that individuals who've received Botox injections (which inhibits facial expressions) exhibit a decrease in the intensity of emotional experience (Davis et al 2010) and are slower in processing emotional language referring to expressions (e.g., anger, frowning) requiring the paralyzed muscle (Havas et al 2010). This research, coupled with the narratives of Moebius subjects, suggests that the embodied expression of emotional states—along with their social sharing—may be necessary for their being experienced (Cole 2010: 667). In other words, the act of bodily *expression* is somehow part of what is *expressed*. Take away the expression and you have removed part of the emotion *itself*.

Similarly, intentions are very often embodied in expressive actions, ripe for

perception. Consider how we see intentions as embodied in human kinematics (Runeson 1985). Runeson and Frykholm (1983) found that viewers of patch-light displays could accurately judge the relative weight of a box lifted by an actor simply by observing the actor's kinematics. Moreover, viewers could accurately judge the weight actors expected to lift based upon their kinematics prior to their actual lifting. They could even tell when actors were pretending to lift a heavy box, discerning both the actual weight of the box lifted as well as the weight the actors intended to convey to the viewer. Similarly, Good (1985) found that viewers could, when watching point-light displays of staged social actions (asking for a light, chance meeting of old friends, etc.), discern whether the activity was intended, and not simply a chance encounter. It appears that this perceptual sensitivity to intentions—along with a host of other social contingencies, like the timing and quality of expressive behavior and emotional attentiveness (Reddy and Morris 2004)—is present early on, developmentally speaking. By 7–9 months, infants perceive certain actions as playful intentions (ambiguous acts like offering and withdrawing objects) with different goals and outcomes than when the same intentions are interpreted literally (Legerstee 2005: 124; Reddy 2008). Even 5.5 month-old infants can distinguish between caregiver's mischievous versus neutral-faced expressions when a ball is offered than taken away, spending more time inspecting the first kind of look than the second and producing more person-specific than object-specific looks (Legerstee 2005). Three month-olds are already capable of perceptually discriminating biological motion from non-biological movements in point light displays (Johansson 1977). Like emotions, intentions, too, are thus often perceptually available via bodily kinematics and the subtle qualities of attention and interaction (Atkins et al 2007).

There is even evidence to suggest that gestures may be part of thinking and memorizing. For instance, we gesture more when reasoning about some problem as opposed to describing a known solution; and the harder a task is—or the more options we face when solving it—the more we tend to gesture (Goldin-Meadow 2003: 136–149). But gestures do more than simply supplement verbal communication. They also appear to cement memory. Children who mimic an instructor's gestures representing a successful strategy for solving mathematical equivalence problems are more likely to learn the strategy (Cook and Goldin-Meadow 2006). Gesturing during the learning of a new mathematical concept assists concept retention (Cook et al 2008). Early (prior to 14 months) gesturing plays a central role in later vocabulary development (Rowe et al 2008). Even the physicality of doodling can en-

hance our ability to focus attention and recall information (Andrade 2010).

Gestures also assist in working through and explaining various computational problems by easing the required mental effort for accomplishing these tasks (Goldin-Meadow 2003). Children and adults asked to explain their strategy for solving a math problem while simultaneously remembering a list of words or letters did better on the recall portion of the test (i.e., reciting the list) when they were allowed to gesture while explaining their problem-solving strategy (Goldin-Meadow et al 2001). The subjects permitted to let their hands do the talking—let their gestures materially represent features of their problem-solving strategy—conserved cognitive resources during the explanation task and thereby freed up cognitive resources for the subsequent recall task.[13]

Moreover, gestures drive group problem-solving and shape a shared learning environment. Becvar et al (2008) showed that gestures play a central role in the development of scientific theories of molecular models in biochemistry labs, manipulating and transform the cognitive context by providing external, relatively stable visuo-spatial dynamics allowing for representational formats not sufficiently available in other modalities (e.g. speech, imaginative simulation, etc.). They allow the content of the theory to be externally reformulated and made more explicit within the real-time material models of gestures—and thus open to further intersubjective scrutiny and collaboration (Becvar et al 2008; Kirsh 2010). The upshot is that a cognitively demanding process of conscious imaginative simulation is transformed into a less-demanding process of perception, conserving cognitive resources for other aspects of the collaborative process.

Finally, gestures can index key transition points within the learning process. A child's gestures can indicate an understanding of how to solve a mathematical equivalence task before the child is capable of verbally articulating their successful strategy (Goldin-Meadow 2003, p. 56). Not only do gestures help the student think. The gesture is additionally a shared (i.e. mutually perceptually accessible) representation of the learner's cognitive struggle. Sensitive teachers may therefore perceive certain kinds of gesture as affording opportunities to intervene—they directly see the learning process dynamically play out within the student's gestures—and help the learner integrate different information by providing the conceptual framework in which to do this (Church & Goldin-Meadow 1986; Goldin-Meadow and Wagner 2005).[14]

13 See Clark (2008: 123–131) for related discussion.

14 In light of these considerations, we need to qualify an earlier objection made during the discussion of the amodal thesis in 2.1 and concede that there is a sense, at least, in which

It seems, then, that there is a significant body of empirical research suggesting that emotions, intentions and even cognitive processes may in various ways "extend" into the visible and tangible body.[15] If so, this lends empirical support to the DP thesis: perceiving patterns of others' expressive behavior (gestures, facial expressions, etc.) is to directly perceive their minds in action. The question remains, however, whether DP doesn't ultimately collapse into a crude form of behaviorism. This is the topic of the next subsection.

3.4. Reply to the Behaviorism Objection

Let us recall Jacob's dilemma: another's bodily expressions either *constitute* their emotional states (say), or they do not. If they do *not* (first horn of the dilemma) then we do not really perceive another's mental states, only their behavior, and then we have made no advance beyond inferential models of our awareness of others' mental states. And (second horn) if they *do*—if an emotion, for example, is identified with patterns of observable behavior— then DP is a kind of reductive behaviorism.

The availability of what we have called CP seems to call Jacob's description of the first horn of the dilemma into question. The defender of CP can agree that bodily expressions don't constitute emotions, yet deny that we need conscious inferences (or simulation routines) to become aware of others' emotions. Though never presented, others' emotions are "co-presented": they are part of the wider field of what is experienced, and not the result of conscious inference or simulation (Smith 2010). As suggested above (section 2.2), however, we think it is ultimately highly questionable whether CP does constitute an alternative to the traditional inferential accounts that place others' mental states beyond reach of our perceptual experience. It might seem,

> another's mental life can be disclosed in a manner analogous to my moving around or manipulating a tomato to bring its occluded backside to perceptual presence. For if gestures are the material vehicles for some cognitive processes, it follows that we can utilize the same sensorimotor skills to access hidden or unattended aspects of these processes the same way we can hidden or unattended aspects of solid opaque objects like tomatoes and chairs. So, we can crane our neck, move around, and achieve a better view on, for example, a student's gesture-speech mismatch. However, unlike with CP, we quite literally get a better view of (part of) the cognitive process itself—again, the cognitive process as it plays out in the visuo-spatial dynamics of the student's gestures—and not simply an amodally co-present aspect.

15   To this extent, our account overlaps somewhat with the so-called "extended mind thesis" (cf. Clark and Chalmers 1998; Clark 2008; Menary 2007; Rowlands 2010).

then, as if we think Jacob's characterization of the first horn of the dilemma is on the right lines.

Things are not quite that simple, however. Everything depends on how one interprets Jacob's statement that bodily expressions either do or don't "constitute" emotions (and other mental states). This can be understood in either a strong or a weak sense. Taken in the strong sense, "constitutes" here means "amounts to" or "equals"; and on this interpretation, the second horn does seem to lead to reductive behaviorism. The view that the expression *equals* or *amounts* to the emotion in the sense that there is nothing more to the latter than the bodily expression is surely a crude version of behaviorism. However, on this reading of "constitute", it is much less clear that opting for the first horn has the consequences Jacob claims it has. Consider icebergs. Would it be right to say that icebergs are "constituted" by the tips that people usually see – in the sense that the tips "equal" the icebergs? We strongly suspect not. But does this then mean that people never (or only very rarely) see icebergs? No enthusiastic visitor to the Polar Regions is going to accept any such conclusion, and nor does it seem to us that they ought to. To see the tip of an iceberg is not to see the whole iceberg, but nor is it to see something else altogether – something distinct from an iceberg. We see icebergs *by seeing proper parts* of them – the parts above the surface of the water. And this, on the view we are defending, is precisely what goes on in cases of "smart" social perception: we see others' emotions by seeing proper parts of their emotions. We see tips, but we don't see the whole iceberg.[16]

16   Some might object to this analogy along the following lines. If someone sees the tip of an iceberg but doesn't realize it (e.g., because he thinks he's hallucinating, or thinks it's a papier-mâché construction floating on the water), he will have wrong expectations about what he would see were he to swim underwater to examine the thing. Still, we may say he saw the iceberg. Not so for the emotion case. If someone sees another person express what is in fact disgust, although the observer fails to realize this (mistaking it for sadness, say, or an impending sneeze), then again the observer would have wrong expectations about what would happen if she put an arm around the other person's shoulder or offered her a handkerchief. But in this case, in contrast to the iceberg case, it seems wrong to say that the observer has *seen* the person's disgust. This intuitive difference between the two cases, it might be surmised, reflects the fact that in the iceberg case the unseen part is of the same sort as the seen part, whereas in the emotion case it's not (what is seen is the facial expression, whereas the "unseen" bit consists of neurological states and subjective experience). In reply, we must note that we fail to see that it is intuitively obvious that we couldn't say, in the disgust case, that the observer has seen the other person's disgust without realizing it. On the contrary, this seems precisely the right thing to say. As for the point about the unobservable bit in the one case being more of the same, while in the other case radically different, we are not sure this is true either. For, on our account, what is unobservable in the disgust case *is* more of the same – more elements of the pattern or

On the weak interpretation, "constitutes" means as much as "is a part of". And on *this* reading, Jacob is right to suggest that opting for the first horn fails to take us beyond inferential accounts of other minds. But now it is much less obvious that the second horn – which is obviously what DP, as we have portrayed it, embraces (or ought to embrace) – entails behaviorism. For, although certain expressive dynamics constitute an external part of some mental processes, the DP view doesn't imply that we perceive *all* of the relevant mental phenomena in these contexts, nor even that we perceive others' emotions and other mental states in *all* sorts of contexts. Some affective and other mental states are hybrid—and thus saying that we perceive aspects or components of some states directly is consistent with there being other aspects or components (i.e., inner psychological parts, neural substrate, phenomenological profile, etc.) that are not directly perceived. We clearly don't have perceptual access to the *totality* of another's mental life; you are capable of thinking, intending, and feeling things that I have no experiential access to. But this is not equivalent to CP since we do, once more, literally perceive aspects or components of some mental processes in patterns of expressive behavior, since the expressive behavior under consideration is a proper part—again, a proper aspect or component—of the mental phenomena being perceived. [17]

Additionally, this conception of the hybrid mind doesn't entail a rejection of phenomenology. Even if the phenomenology of certain emotional states is dependent upon their behavioral expression, it doesn't follow that their phenomenology is thus *reducible* to their behavioral expression. Dependence isn't equivalent to reducibility. On the contrary, our suggestion is that some states are hybrid: they are composed of both internal (i.e. neural, psychological, phenomenological) and external (i.e. bodily) processes that together form an integrated unity. Acknowledging the latter's role in driving some affective processes by no means entails rejecting or disregarding the former.

Regardless of how one interprets Jacob's argument, there is, against his intentions, a route between the Scylla of Cartesian internalism and the Cha-

"affect programme" that is the disgust: more disgust, if you will. It seems to us that it is only if one accepts some fundamental divide between the "inner" (the subjective feeling, e.g.) and the "outer" (the expression) that one is barred from viewing the unobserved parts as (in an important sense) more of the same. Needless to say, it is precisely the idea of such a divide that our account is intended to undercut. (Thanks to John Michael for pressing the objections discussed here.)

17   This suggestion obviously needs developing and we aim to do so in future work. Note that we are not alone in advocating a mereological take on the relation between emotion and expression. A similar view is defended in Green (2007).

rybdis of phenomenology-rejecting behaviorism. Jacob's criticism therefore rests on a false dilemma: the insistence that mental processes are either wholly inside or wholly outside. According to the view we have defended here, some are in fact *both*. When I bodily express my elation by smiling broadly, it's not as if the external aspect of the process suddenly exhausts my emotion; rather, the former is part of the latter. In perceiving another's emotional expression, I perceive a dynamically unfolding *process* which involves "interaction with the world around and responsiveness to feedback from that world" (Stout 2010: 40). Or, as Merleau-Ponty puts essentially the same point, "I perceive the grief or the anger of the other in his conduct, in the face or his hands, without recourse to any 'inner' experience of suffering or anger, and because grief and anger are variations of belonging to the world, undivided between the body and consciousness, and equally applicable to the other's conduct, visible in his phenomenal body, as in my own conduct as it is presented to me" (Merleau-Ponty 2002: 415). Such processes consist partly of internal operations—including not only neural operations but a phenomenological profile given to the subject of the process—but also partially consist of publically-perceivable bodily operations that are ultimately also part of its hybrid structure. This model of the mental thus offers a way of understanding how we can understand a constitutive sense of bodily expression without embracing behaviorism.

4. Conclusion

We identified a fundamental ambiguity in the DP proposal concerning the way that behavior might be said to express mental phenomena. Specifically, we argued for what we termed a "constitutive" sense of bodily expression, according to which certain bodily actions make up proper parts of some mental phenomena. Despite its initial implausibility, we found that this idea is well-supported by multiple strands of empirical research. Additionally, embracing this constitutive sense of expression allowed us to get a firmer grip on DP's claim that we do, at least at times, directly perceive aspects of another's mentality within their patterns of expressive behavior. DP is thus equipped to offer a genuine alternative to standard inferentialist accounts of other minds, which—often implicitly, and without argument—deny the observability of mental states. Finally, we showed that DP needn't be seen as committed to behaviorism. While much of our mental life may be publically accessible, embodied in overt patterns of expressive behavior, much of it, neverthe-

less, is not. Our hybridity preserves our interiority, including not only our introspective capacities but additionally the phenomenological character of our experience.[18]

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