

Amodal Mind-Perception: Combining Inferentialism and Perceptualism

Do we perceive the minds of others? Or do we infer that they have minds from what we do perceive, which is restricted to their bodily motions and expressions? Call a positive answer to the first question ‘perceptualism’, and a positive answer to the second ‘inferentialism’. Compelling motivations can be found for both perceptualism and inferentialism, but they have generally been taken to be incompatible. I argue that reflection on the widespread phenomenon of ‘amodal perception’ shows that these two views can in fact be combined in a way that preserves what is attractive about both. Even if behaviourism is false, our perception of other people’s behaviour can thereby also be a perception of their minds.

Here is a second question of about our knowledge of other minds: does it depend upon having mental-state concepts? Call positive and negative answers to this question ‘conceptualism’ and ‘non-conceptualism’. On the one hand, it seems that it has to, because it deploys such concepts. But there is something not quite right about restricting knowledge of other minds to subjects who possess mental-state concepts - for it seems both that many animal and human subjects lack mental-state concepts, and also that they are not entirely blind to the minds of others. A dog probably should not be ascribed any beliefs about its owner, or its packmate, that should be expressed by statements like ‘Owner believes that X’, but if we then conclude that it regards these others as mindless physical objects, like we regard chairs or mushrooms, we seem to be leaving out something important.¹ What is this important thing that is left out, this pre-conceptual awareness of other minds? I argue that an account of mind-perception in terms of amodal perception can illuminate this pre-conceptual awareness.

¹ For evidence that animals and infants have some level of mind-awareness, one could look at studies of joint attention and gaze-following (e.g. Butterworth & Jarrett 1991, Tomasello, Call, and Hare 1997, Hare & Tomasello 1999, Call & Tomasello 2005). For evidence that they do not have a grasp of mental-state concepts, one could look at habitual failures in the ‘false belief’ test (e.g. Wimmer & Perner 1983, Baron-Cohen et al. 1985, Leslie & Frith 1988). None of these data are easy to interpret, but my argument does not depend on positively endorsing the presence or absence of mental-state concepts in any particular case.

Section 1: Inferentialism and Perceptualism

I use the term ‘inferentialism’ for a family of views about the basis for our knowledge of other minds, the most prominent of which hold that this basis is either an *argument by analogy* from similarities between our own behaviour and that of others, or an *inference to the best explanation* of observed behaviour (see Mill 1889, pp. 243–244, Russell 1948, pp.482–486, Hyslop & Jackson 1972). Both of these views agree that knowledge of other minds is separated from directly perceptual knowledge by a distinct inferential step, and that this step employs a form of inference that is also employed more generally in our empirical reasoning about non-mental things. Other views which shared these commitments might exist, and would also count as ‘inferentialist’.

There are broadly two ways to criticise inferentialism: on its own terms, as involving a weak or faulty inference, and on the grounds that rational inference is the wrong sort of process to underlie our everyday knowledge of other minds. The first way involves such objections as that an argument by analogy from one’s own case would be based on only a single instance, and thus very weak: in this paper I will not consider such objections. What I will consider instead is the objection that, even if a solid inference to other minds could be drawn, our actual relation to other minds does not seem anything like the drawing of such an inference. We do not approach other people like scientists, collecting observations and seeking to explain them by offering up hypotheses about an unobserved mechanism. We relate to other people far more immediately and directly than scientists relate to their postulate.²

These sorts of worries might drive one towards the rival position that I have called ‘perceptualism’, which holds that the minds of other can in some sense be right there in the content of

² I do not mean to say that inferentialists are necessarily unable to account for this sense of immediacy, but simply that they need to find some way to do so: on some construals my own proposal in section 3 could be seen as a way for them to discharge this burden.

perception. We can see people's emotions, desires, and so forth - not *all* of them, since sometimes we do have to infer someone's mental state, but in enough cases that when we do have to draw an inference we can recognise that situation as distinctly indirect, relative to our primary everyday awareness of others. The most famous defence of this sort of view comes from behaviourists and verificationists (Ryle 1949, pp.20-21, Malcolm 1958). but one need not necessarily be a behaviourist to accept perceptualism. Similarly, perceptualism is sometimes associated with the idea that strict deductive entailments can be drawn from behaviour to mental states, though again that is not something which all perceptualists must accept - and even those who do need not think that our everyday awareness of other minds is strictly deductive or infallible, since the criteria needed for a deduction might be very extensive compared to brief and limited perceptions that we typically rely upon.

The big problem for perceptualists is that, even if they do not quite accept behaviourism, they have difficulty accounting for the very intuitive idea that mental states are private: that each person's mind is present to them in a distinctively direct way that it is not present to others. Surely it is somehow bound up with the whole idea of a subjective mental state that it is not a publicly observable thing which people can 'just see'.³ Once we grant that our access to other minds is somehow indirect or mediated, relying on perception of something distinct like an utterance or facial expression, we seem dangerously close to falling back into the inferentialist position, in which what we *really* perceive is the utterance or expression, and the mental state is then inferred.

We are left, then, in a dilemma: our knowledge of other minds is either perceptual, and thus too direct to allow for privacy, or it is inferential, and thus too indirect to do justice to our actual relationship with others. When the options are specified so sharply it may seem obvious that the solution must be somewhere in the middle - we know of other minds by a process that is 'sort of

³ Could a non-behaviourist perceptualist rescue privacy by saying that while others may perceive my mental life, and thereby be 'directly' aware of it, they are fallible in so doing, while I am infallible? They could, but infallibility, unless very heavily qualified, is a fairly implausible way to spell out the sense of 'direct knowledge' that we have of our own minds.

perceptual' but also 'sort of inferential'. The challenge is to explain this in a coherent, informative, way. A supplementary challenge is to explain how this knowledge might be in some respects conceptual and in other respects pre-conceptual. In what follows I offer a way to do this.

Section 2: Introducing Amodal Perception:

It is a pervasive feature of everyday perceptual experience that we experience objects as having features beyond the immediately perceptible, and thus are perceptually aware of those features despite in some sense being unable to perceive them. The term 'amodal perception' has come to refer to this sort of 'perception as unperceived', reflecting the idea that we somehow perceive these features without sensory stimulation and thus not in any sensory modality.

The standard examples involve **visual occlusion**. Consider seeing three-dimensional objects with fronts and backs. At present I am looking at a coffee cup; in a narrow sense, I see only the front of it; the other side is concealed from me. In a broader sense, however, I see the cup itself, a whole with a front and back. I am in some indirect sense aware of the back of the cup, but simultaneously aware that I am not aware of it in the same sense that I am aware of the front; I perceive it amodally. **Moreover, I perceive the back amodally in virtue of perceiving the front modally.** Indeed, the back of the cup is in a sense seen 'in' the front, because I see the front *as* the front *of* something which also has a back. **My awareness of the back lies in my perceiving the front as one aspect of something with other aspects. Let us say that the front is, for me, the 'revealed aspect', and the back the 'concealed aspect', and while I am aware of the former as 'given', I am aware of the latter only in a weaker sense, as 'not given'.**

Consider also the relation between the cup and the table it stands on. I perceive this table as having a broad, brown, unbroken surface – but part of this surface is behind the cup, where I cannot directly see it. Yet I am aware of the surface I do directly see as continuous with the surface I do not,

perceiving some sections through vision and other sections ‘amodally’.⁴ My perception reveals the visible surface *as* just a portion of a single, unbroken surface. Here the revealed and concealed aspects are two portions of a single surface, rather than two surfaces of a single object.

Other visual examples might involve conditions of poor visibility, when darkness, distance, or fog prevents us from seeing something clearly. We rarely experience the obscured object as being somehow itself fuzzy or lacking in detail – rather, we experience it as having plenty of detail, which we cannot make out. Insofar as we are aware of this detail as not visible, we could be said to perceive it amodally.⁵ Here the revealed and concealed aspects are not spatially separate, but the broad outlines and fine details of a single object. The rough aspect that is given presents itself as a rough and imperfect view of an object that can be seen in better ways.

There can also be non-visual examples; for instance, Nanay (2010, p.241) discusses the tactile experience of feeling the handle of a cup as the handle of something with other, unfelt parts. Similarly, we might think of the concealed aspects of a sound or smell as the greater intensity or complexity which any given percept might yield if we moved closer, took our hats off, or sniffed harder.

In each case there is a revealed aspect and a concealed aspect, experienced as intimately connected in a single object. One aspect is given and the other is not, but in a broader sense we are aware of both. I leave unanalysed the exact meanings of ‘revealed’, ‘concealed’, ‘aspect’, and ‘connected’: they mean whatever they must to accurately describe this sort of experience. In the language of ‘seeing-as’, one might say: the revealed aspect is seen ‘as’ merely one aspect of an object with more aspects, and that object is thereby seen ‘as’ having certain concealed aspects.

⁴ As Nanay (2010, pp.241) points out, similar perceptual phenomena can occur with overlapping shadows, or with partial illumination that reveals only part of an object; in neither case is there strictly occlusion.

⁵ More examples like this are discussed by Merleau-Ponty 1962, pp.302-311, and subsequently by Kelly 2004, who argue that amodal perception is essential to colour and shape constancy, that is, the way that we can see an object as having a constant colour or shape which we only imperfectly sense under given viewing conditions.

Though the concealed aspect is not given to me, I do learn about it, *via* the revealed aspect. I may not be able to see the rear side of my coffee cup, but I can tell a fair bit about its overall size, shape, and location, just from the aspect which is revealed. I also seem to see it as having a certain colour, patterning, etc., at least if it is a familiar cup, or a cup of a familiar make. Here background information is important – an aspect may be more informative to one who knows what to look for, or how to interpret what they see.

Different authors have pursued different questions about amodal perception (e.g. Michotte 1965, Clarke 1965, Noë 2005, Matey 2013). Some have asked how we can properly account for its phenomenology, and the role this phenomenology plays in our impression of the object's independence (Husserl 1982, Merleau-Ponty 1962, Kelly 2004). Others have focused on which representational faculty amodal perception involves – perception, cognition, imagination, or something else (Noë 2005, Nanay 2010, Briscoe 2011). But all that I will rely on is that in amodal perception we are aware of something yet also aware of its being somehow concealed from us.

Section 3: Amodal Mind-Perception

Everyday amodal perception lets us perceive things as unperceived. But if this is possible, it might also be possible to perceive things as imperceptible - which is precisely our apparent, and apparently paradoxical, relationship to other minds. Thus perceptualism and inferentialism might be reconciled through the idea that we perceive people's minds through perceiving their bodies just as we perceive their backs through perceiving their fronts: the difference being just that in the latter case we can easily come to perceive what is concealed (someone's back) as revealed, while in the former case what is concealed (someone's mental state) is necessarily concealed.

So for instance we might say that when we can ‘see someone’s anger’ in their face, or ‘hear the sadness’ in their voice, we experience their facial expression or spoken utterance as continuous with, and thus indicating, an emotional state which is fully revealed only to them, and not to us. Similarly, when we spontaneously interpret someone’s actions or words as expressing some desire or belief, we are perceiving their propositional attitude as concealed from us but still perceptually present in their actions or words. Another way to phrase this would be to say that the relation of ‘expression’ that obtains between a mental state and a behaviour functions, in our perception, much less the relation between different sides or different aspects of one object. Call this the ‘amodalist’ proposal.

This approach retains the major virtues of perceptualism, because it explains why other minds seem as immediately present to us as the three-dimensional nature of the objects we perceive. This captures the phenomenology of other minds and allows us to extend, to our knowledge of other minds, whatever sort of unmediated presumption of veridicality might be thought to attach to perceptual knowledge. Yet it is not behaviouristic - indeed it insists upon the in-principle privacy of each person’s mind, which was the great bugbear of behaviourism.

Amodalists can also take over much of the inferentialist’s account by supposing that the rational structure they identify is important to both the psychological explanation of, and epistemic justification of, our amodal perception of other minds. For it is clear in general that the content of amodal perception can vary among subjects, and can be false, and so something must explain both why we experience things as having certain concealed aspects, and also why this seeing is not systematically illusory. And the factors that play these roles might very well be the sort that inferentialists have appealed to - explanatory and predictive strength and success, generalisations and analogies from previous experience, and so on.

However, it would be misleading to describe amodal perception as a matter of inferring the concealed from the revealed, for two reasons. Firstly, since the amodal structure is immediately present

in perceptual experience, whatever processes generate it must work so swiftly and unconsciously as to be in some significant sense ‘sub-personal’, happening below the level of what the person themselves does. Secondly, inferences involve holding the premises fixed while establishing the conclusion - the conclusion does not go back and alter the premises. But there seems to be a sense in which the revealed aspects of a thing are seen differently when they are seen as aspects of something with certain concealed aspects; the two sides interpenetrate in a way that conclusions and premises do not.

Perhaps there is a weak sense of ‘inference’ in which the amodalist account of knowledge of other minds still relies on inferences, and so maybe amodalism is a form of refined inferentialism. Similarly, there may be weaker and stronger senses of ‘perception’, and amodal perception may be genuinely perceptual in the former sense but not the latter. I do not think it really matters whether we classify the amodalist account as perceptualist, inferentialist, both, or neither: what matters is that it combines the virtues of both approaches.

Section 4: Amodal Perception and Conceptualism:

I have been characterising the content of amodal mind-perception as involving mental states - e.g. we perceive someone’s movements as expressing a ‘feeling’ or ‘desire’. It seems likely that this could be the case only for subjects who possessed mental state concepts - e.g. who had some idea of ‘feelings’ and ‘desires’. And if we were happy conceptualists about knowledge of other minds, then we might simply accept that result and stop here. But let us suppose that we are interested in the possibility of a *non-conceptual* knowledge of other minds: can we still accept the amodalist account? I believe we can, by supposing that directly perceiving the physical expressions of another being’s mental state provide us with an amodal perception of the *objects* of that mental state, one independent of any specifically mental idea of how the other being is related to that object.

The simplest cases of this would simply involve tracking what another can perceive: the open eye gives us an amodal perception of things that lie before it, without in the same way connecting with what lies behind it. Closely related would be the perception of attention: taking the turned face or oriented body of another as indicating a thing in a certain direction (Cf. Roessler 2005, Campbell 2005). But the proposal also allows for the perception of affective and conative states. For instance, suppose I see someone staring longingly at something. The non-conceptualist amodalist proposal is that this (modal) perception provides me with an amodal perception of ‘a desirable object’ - that is, in virtue of my seeing the stare, my perceptual experience contains a sense that something desirable is present (just as my in virtue of my seeing the front of a cup, my perceptual experience contains a sense that the back side of that cup is present). When I hear someone’s cry of fear, it gives me a sense that something frightening is present. And so on. This might co-exist with conceptual awareness that the person I see or hear has something called a ‘desire’ or an ‘emotion’, but does not require it: rather than mind-perception involving perception of a special sort of thing, it could simply involve perceiving things as connected to other things in a distinctive high-level pattern. Indeed, the concept of a mental state might itself be, in part, the idea of a certain connection among objects. The reaching hand that I see is not ‘ontologically’ connected with the apple it reaches for: it is not another part, or surface, or degree of detail, of the apple. Yet the perception of it somehow indicates the apple to us, even if we cannot see the apple itself, so what is this distinctive sort of connection? My suggestion here is that a subject need not have any very good idea of what this connection is in order to perceive and make use of it. Framed as an evolutionary or developmental hypothesis, the idea would be that once the apparatus for amodal perception of object’s hidden parts or surfaces or details is in place, it would be easy to tweak it to also track other being’s mental lives. Yet such tweaking would not require a fully-formed concept of intentional mental states, and in particular might remain at the level of understanding bodily

behaviour and perception in distinctive ways, rather than taking it to reflect a distinctive internal state which could occur without bodily manifestation.

There are at least three immediate objections to this non-conceptualist amodalism, which I will briefly comment on.

Firstly, the proposal only seems to work for mental states that are directed onto publically observable objects, and not those that are undirected or directed inwardly. This seems basically fine to me: a pre-conceptual perceiver would only be able to make sense of some and not all mental states (Cf. Call & Tomasello 2005, pp.58-60). What is problematic here is mainly the status of particular mental states like pain or despondency that seem to be i) debatably directed onto objects, but ii) the kind of thing that pre-conceptual creatures might well have some ability to perceive. I think the appropriate response here would be to adopt analyses of those mental states that treat them as directed (e.g. pain onto a body part, despondency onto ‘things in general’), but I cannot argue for those analyses here.

Secondly, we regularly perceive someone as having a mental state directed onto some object, while also directly perceiving the object itself (as when I perceive an apple, and also perceive you as seeing, or wanting, or hoping to get, the apple). But isn't it contradictory to say that we perceive one thing both modally and amodally? No, it is not - simply consider a case where we simultaneously see the front of something and also the reflection of its rear side in a mirror. What this illustrates is that it is too coarse-grained to speak simply of a subject amodally perceiving an object: we should rather speak of the relation between one ‘modally’ perceived thing and the other aspects that it is ‘amodally’ perceived as having (in other work I have used the term ‘adumbrate’ for this relation).

Thirdly, this proposal seems to impute a sort of self-other confusion to mind-perceivers: when they see someone who is visibly expressing anger, they come to perceive something as ‘outrageous’ and thereby in some degree share that anger. But I do not think this implication is necessarily a problem: indeed, an influential approach to the psychological processes underlying our understanding

of other minds involves the idea that we ‘simulate’ other people’s mental states, i.e. recreate them in our own minds (see Goldman 2008, cf. Hellie 2013). I think one of the nice features of the amodalist account, in fact, is that it suggests an interesting point of connection between the idea, particularly associated with Strawson’s (1974) defence of Kant, that amodal perception is in some sense ‘infused with’ imagination, and the idea that sympathetic imagination is crucial to our understanding of other minds.

Conclusions:

We perceive other minds, but we perceive them as imperceptible. This sounds like a contradiction, but makes sense when we see it as a form of amodal perception, an entirely routine way to perceive things as unperceived. Analysing perception of other minds as amodal perception lets us combine the virtues of perceptualist and inferentialism. Moreover, the amodalist analysis can easily be extended to allow for both conceptual and pre-conceptual knowledge of other minds, with normal adult humans having both and many other beings having only the latter.

References:

- Baron-Cohen, S., Leslie, A. M., and Frith, U. (1985). *Does the autistic child have a 'theory of mind'?* *Cognition* 21 (1) pp.37–46
- Briscoe, R. (2011). *Mental Imagery and the Varieties of Amodal Perception*. *Pacific Philosophical Quarterly* V92:2, pp.153–173
- Call, J., and Tomasello, M. (2005). *What Chimpanzees Know about Seeing, Revisited: An Explanation of the Third Kind*. In Eilan, N., Hoerl, C, McCormack, T., and Roessler, J. (eds.), *Joint Attention: Communication and Other Minds; Issues in Philosophy and Psychology*. Oxford: Oxford University Press, pp.45-64
- Campbell, J. (2005). *Joint Attention and Common Knowledge*. In Eilan, N., Hoerl, C, McCormack, T., and Roessler, J. (eds.), *Joint Attention: Communication and Other Minds; Issues in Philosophy and Psychology*. Oxford: Oxford University Press, pp.287-297
- Clarke, T. (1965). *Seeing Surfaces and Physical Objects*. In Max Black, ed., *Philosophy in America*, Cornell University Press
- Goldman, A. (2008). *Simulating Minds*. Oxford University Press.
- Hellie, B. (2013). *Against Egalitarianism*. *Analysis*, 73:304–320.
- Husserl, E. (1982). *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy*. First Book, trans F. Kersten, Dordrecht: Kluwer Academic Publishers
- Hyslop, A., and Jackson, F. (1972). *The Analogical Inference to Other Minds*. *American Philosophical Quarterly* V9, pp.168-76
- Kelly, S. (2004). *On seeing things in Merleau-Ponty*. In: T. Carmon (Ed.), *The Cambridge companion to Merleau-Ponty*. Cambridge: Cambridge University Press.
- Leslie, A. M. and Frith, U. (1988). *Autistic children's understanding of seeing, knowing and believing*. *British Journal of Developmental Psychology* 6 (4): 315–324.
- Malcolm, N. (1958). *Knowledge of Other Minds*. *Journal of Philosophy* V55, pp.35-52
- Matey, J. (2013). *Representing the Impossible*. *Philosophical Psychology*, V26:2, pp.188-206
- Merleau-Ponty, M. (1962). *The Phenomenology of Perception*. Originally published 1945, trans. Colin Smith. Routledge and Kegan Paul
- Michotte, A., Thines, G., & Crabbe, G. (1964/1991). *Amodal completion of perceptual structures*. In: G. Thines, A. Costall, & G. Butterworth (Eds.), *Michotte's experimental phenomenology of perception* (pp.140-167). Hillsdale, NJ: Erlbaum.
- Mill, J. S. (1889). *An Examination of Sir William Hamilton's Philosophy and of the Principal Philosophical Questions Discussed in His Writings*, 6th edn. London: Longman, Green, Longman, Roberts, and Green
- Nanay, B. (2010). *Perception and Imagination: Amodal Perception as Mental Imagery*. *Philosophical Studies*, V50, pp.239-254
- Noë, A. (2005). *Real presence*. *Philosophical Topics*, 33, pp.235–264

Roessler, J. (2005). *Joint Attention and the Problem of Other Minds*. In Eilan, N., Hoerl, C, McCormack, T., and Roessler, J. (eds.), *Joint Attention: Communication and Other Minds; Issues in Philosophy and Psychology*. Oxford: Oxford University Press, pp.230-259

Russell, B. (1948). *Human Knowledge: Its Scope and Limits* London: George Allen & Unwin

Ryle, G. (1949). *The Concept of Mind*. London: Hutchinson.

Strawson, P. F. (1974). *Imagination and Perception*. In *Freedom and Resentment and Other Essays*, London: Methuen, pp.45-65

Wimmer, H. and Perner, J. (1983). *Beliefs about beliefs: Representation and constraining function of wrong beliefs in young children's understanding of deception*. *Cognition* 13 (1) pp.103–128