PERCEPTUAL PHENOMENOLOGY

Any account of conscious experience in general, and perceptual experience in particular, needs to be able to tell which properties are part of our non-perceptual and perceptual phenomenology. The aim of this paper is twofold. I propose a new methodology for settling these questions, one that is based on empirical studies of patients with brain lesions. I also demonstrate how this methodology is supposed to work by arguing that a kind of property that is not at all obviously perceptual, namely, the property of being suitable to perform a certain action with, is nonetheless part of our perceptual phenomenology.

I am looking at an apple. The apple has a lot of properties and some, but not all, of these are part of my phenomenology at this moment: I am aware of these properties. And some, but not all, of these properties that I am aware of are part of my perceptual (or sensory) phenomenology. If I am attending to the apple's color, this property will be part of my perceptual phenomenology. The property of being a granny smith apple from Chile is unlikely to be part of my perceptual phenomenology.

Here are two problems for anyone who is interested in conscious experience in general, and perceptual experience in particular:

(a) How can we tell which properties are part of our phenomenology and which ones are not?
(b) How can we tell which properties are part of our perceptual phenomenology and which ones are part of our non-perceptual phenomenology?

I will focus on (b) in this paper. My aim is twofold: I propose a methodology for answering the question about which properties are part of our perceptual phenomenology and I provide an example for how this methodology could be applied: I argue that the property of being suitable to perform a certain action with, is part of our perceptual phenomenology.

I. The methodology of contrast cases

Both (a) and (b) have been widely discussed (Siegel 2006, Masrour forthcoming, Pitt 2004, Robinson 2005, Bayne and Montague forthcoming) and it is widely assumed that the right methodology for deciding how to answer (a) and (b) is by appealing to contrast cases (see Masrour forthcoming, Siegel 2007, Kriegel 2007 and Bayne 2009 on the methodology of settling these questions). In the case of (a), this means that if we find two token experiences, E1 and E2, that only differ in that property P is represented in E1 but not in E2 and if E1 and E2 are phenomenally different, then property P is part of our phenomenology. Similarly, in the case of (b), if we find two token experiences that only differ in that property P is represented in one but not the other and if the two experiences differ in their perceptual phenomenology, then property P is part of our perceptual phenomenology.

An example for how this may work in case (a): I am looking at a page written in Arabic script before and after taking an intensive Arabic language class: these experiences are E1 and E2, respectively. My sensory stimulations in E1 and E2 are the same: I am looking at the very same page, but there is a kind of property that is represented in E2, but not in E1: the property of being

meaningful Arabic words (and not merely nicely curving lines). If E1 and E2 differ in their phenomenal character, then this property is part of my phenomenology.

Case (b): At a dinner party, I'm eating a piece of meat that I take to be chicken, when my host tells me that it is in fact a piece of rat meat (or pigeon, etc; use your favorite disgusting animal). My experience before she told me this is E1; my experience after that is E2. The only difference between E1 and E2 is that there is one property, the property of being a rat, that is represented in E2 and E1 – in all other respects, E1 and E2 are the same. If I am really disgusted by rats, then the point can be made that the perceptual phenomenology of E1 and E2 are different: the meat will *taste* different.

II. Doing without contrast cases

The problem with the contrast case methodology for deciding (a) and (b) is that it is difficult to settle disagreements about phenomenology. If I say that E1 and E2 differ in their phenomenal character (or in their perceptual phenomenology) and you deny this, it is not clear how the issue can be decided. This is even more problematic in the case of (b), where intuitions wildly differ with regards to what phenomenal character counts as perceptual. Does the rat meat example really show that being a rat is part of our *perceptual* phenomenology? If someone claims that this property is part of our non-perceptual phenomenology, it is difficult to settle this disagreement.

As a result, I propose a methodology for settling (b), at least in the case of some kinds of properties, that does not appeal to contrast cases. The methodology involves close attention to patients with brain lesions.

I take my lead here from Tim Bayne, who used such cases in order to decide (a). He argues that associative agnosia patients lose their ability to recognize objects as belonging to certain sortals (to recognize them as bicycles or stethoscopes) but not their ability to represent the shape, size and color properties of these objects. He concludes that as their phenomenology also changes, this change can only be explained with the change in the represented sortal property: hence, sortal properties are part of one's phenomenology (Bayne 2009).

We need to note two aspects of this argument. First, it is an argument about (a) and not about (b): it says nothing about whether sortals are part of our perceptual phenomenology. Second, and more importantly, in spite of Bayne's appeal to patients with brain lesions, the argument still uses the methodology of contrast cases. The patients' experience before the accident that caused the brain lesions is E1 and their experience after is E2. E1 and E2 differs only in that sortals are represented in E1 but not E2. If E1 and E2 differs in their phenomenal character, we can conclude that sortals are part of our phenomenology. But then we encounter the usual problems with the methodology of contrast cases. One can deny that E1 and E2 really differs in terms of their phenomenal character and it is not clear how Bayne could respond.

I want to keep Bayne's emphasis on patients with brain lesions but drop his contrast case methodology. If we find patients who experience property P, but do not experience any lower level properties, such as shape, size or color, then we have good reason to conclude that property P is part of our perceptual phenomenology. I use a case study to show why this is the case.

III. Case study: unilateral neglect and the experience of action-properties

To give a case study of how this may work, I argue that a property that is even less obviously perceptual than sortal properties is part of our perceptual phenomenology: the property of being suitable to perform an action with (see also Nanay forthcoming a, Nanay forthcoming c). I call

properties of this kind action-properties. My claim is that action-properties are part of our perceptual phenomenology.

The claim I am making is about perceptual phenomenology. It needs to be distinguished from a similar but importantly different question, namely, the question about whether a property is represented in perception (see Nanay forthcoming a, Nanay forthcoming b, Nanay forthcoming c). Perception can be conscious or unconscious and there may be properties that are perceptually represented but nonetheless fail to show up in our perceptual phenomenology. Further, depending on how we think about the relation between perceptual content and perceptual phenomenology, a property may be part of our phenomenology but nonetheless fail to be part of our perceptual content. Question (b) is about perceptual phenomenology, not perceptual content.

As promised, my argument is based on empirical findings about patients with brain malfunction. More specifically, patients with symptoms of unilateral neglect[1] are slow and sometimes even unable to find objects defined by salient visual property (such as their color). Yet, they are capable of, and relatively efficient in, finding objects defined by the action they can be used for (Humphreys - Riddoch 2001, Riddoch et al. 1998, esp. p. 678). This experimental finding satisfies the conditions for the methodology I described in the last section: these patients do experience the property of what an object can be used for (in fact, that is what alerted the experimenters to the possibility of this experiment, see Humphreys - Riddoch 2001, p. 84). And they were, like most unilateral neglect patients, unaware of the shape, size and color properties of the objects presented to them (this was confirmed by Glyn Humphreys in personal communication). Now let us see why these experimental findings are relevant for the purposes of keeping perceptual and non-perceptual phenomenology apart.

I will give two arguments for the claim that action-properties are part of perceptual phenomenology: both are *reductio* arguments. I take them in turns:

III. a. The first argument

Suppose that I am wrong: action-properties are not part of our perceptual phenomenology. How would this work? There seems to be two options: either the experience of action-properties is based on, and grounded in, the experience of shape, size and color properties or it is not: it is provided by a subsystem separate from the subsystem that is responsible for the phenomenology of shape, size and color properties.

I will argue that neither horn of this dilemma is viable for the proponents of the idea that action-properties are not part of our perceptual phenomenology. The first horn seems to be inconsistent with the empirical evidence from unilateral neglect, whereas the second horn does not in fact support the claim that action-properties are part of our non-perceptual phenomenology.

The first option seems to be the default among those who think about perceptual and non-perceptual phenomenology. The claim for *reductio* then would amount to saying that only properties like shape, size and color are be part of our perceptual phenomenology and this phenomenology would somehow give rise, in the 'stream of consciousness' to a mental state or event with non-perceptual phenomenology and action-properties only show up in this non-perceptual phenomenology. The main idea here is that as the experience of shape and color is temporally prior in the 'stream of consciousness' to the experience of action-properties; therefore, we have reason to believe that the former is still perceptual, whereas the latter is already non-perceptual.

[1] Unilateral neglect is caused by brain lesions, primarily in the right parietal areas. Patients showing these symptoms are normally unaware of the left hand side of their body and environment.

Susanna Siegel, for example, takes this framework for granted when she argues against the view that sortal properties are part of our non-perceptual phenomenology (Siegel 2006). Her argument is that if the phenomenal difference between two experiences is not perceptual, then it must be due to an event that occurs somewhere later in the 'stream of consciousness' processing that has its own non-perceptual phenomenology (Siegel 2006, pp. 492-496), and, Siegel continues, no candidate for such non-sensory event turns out to be a plausible candidate. Whether Siegel considers all possible candidates for such non-sensory event type or there are some non-sensory event type that she failed to consider and that could account for the phenomenal difference is irrelevant now: for the purposes of this paper, what matters is that her conceptual framework presupposes that the experience of higher order properties (like sortals or action-properties) is based on, or grounded in, the experience of shape and color properties.

But if we accept this framework, then the empirical evidence from unilateral neglect has a very straightforward consequence: it is possible to have an experience of action-properties without an experience of shape and color properties – that is exactly what happens during the visual search tasks of these unilateral neglect patients. Hence, the experience of action-properties cannot be based on, or grounded in, the experience of shape and color properties.

It is important to be careful about what these experiments demonstrate. They do not show that the property of 'being suitable for a certain action' (or 'to be used for a certain action') is perceptually *represented* in healthy humans or even in patients with symptoms of unilateral neglect. These experiments themselves will not settle any disagreements about perceptual *content*. But they can help us to resolve some disagreements about perceptual *phenomenology*.

What the unilateral neglect patients' visual search experiments show is that in the case of these patients the phenomenology of what an object can be used for is preserved while the phenomenology of seeing undoubtedly sensory properties, like color and shape was missing or delayed. Thus, the phenomenology of what an object can be used for is temporarily prior to the phenomenology of seeing color and shape.

This does *not* prove that the property of what an object can be used for is processed earlier in the perceptual system than the property of color and shape in healthy humans. What it does prove is that in healthy humans the phenomenology of what an object can be used for is not an event that comes necessarily after, and that is based on, the perceptual phenomenology of seeing the object's shape and size. If it were, then in those humans who have missing or delayed phenomenology of seeing the object's shape and size would also have missing or delayed phenomenology of what the object can be used for. But, as the experiments show, they don't. But if the phenomenology of what an object can be used for is not an event that comes necessarily after, and that is based on, the perceptual phenomenology of seeing the object's shape and size, then we have no reason to suppose that the perceptual phenomenology of shape and size gives rise to the non-perceptual phenomenology of action-properties. The first horn of the dilemma that the proponent of the claim that action-properties are part of our non-perceptual phenomenology faces does not seem viable.

The second horn of this dilemma, as we have seen, is to deny that the experience of action-properties is based on, or grounded in, the experience of shape, size and color properties. According to this picture, there are two different subsystems in the brain, one of which is responsible for the phenomenology of action-properties and the other one for the phenomenology of shape and color. The evidence from unilateral neglect can be accommodated within this framework, but there is a high price to pay for that, namely, this framework fails to support the original claim for *reductio*, namely, that that action-properties are not part of our perceptual phenomenology.

If we accept this framework, then it is easy to explain what happens in the case of the unilateral neglect patients: the subsystem that is responsible for the phenomenology of shape and

color properties is malfunctioning and thereby it fails to (or is slow to) deliver the phenomenology of shape and color, but the subsystem that is responsible for the phenomenology of action-properties is intact, therefore, the patients do experience the objects as something that can be used for such and such an activity. Hence, so they could argue, the evidence from unilateral neglect fails to provide any reason to doubt that action-properties are part of our non-perceptual phenomenology.

This line of argument could be supported by empirical considerations. There is some important empirical evidence in favor of the double dissociation between the perceptual subsystem that is responsible for recognition and identification (ventral subsystem) and the one that is responsible for the perceptual guidance of actions (dorsal subsystem) (see Milner-Goodale 1995, Goodale-Milner 2004, Jeannerod 1997). So the argument against the relevance of the unilateral neglect case could be thought to find some support in this distinction: the idea would be that in the case of the unilateral neglect patients, the ventral system is slow or malfunctioning, whereas the dorsal one is intact: that is why these patients experience what an object can be used for before (or even without) experiencing its shape or color. The conclusion is, again, that we have no reason to suppose that the evidence from unilateral neglect patients give us any reason to suppose that action-properties are part of our perceptual phenomenology.

My response to this argument is twofold. First, I want to warn against using the dorsal/ventral distinction in support of this argument and, second, I want to raise a more general problem that this argument faces.

The double dissociation between the ventral and the dorsal visual subsystems has no immediate implications to what is visually *experienced*. Importantly, the distinction is not between the *experience* of identifying and recognizing and the *experience* of action control. In fact, the main proponents of the two visual subsystems hypothesis, Milner and Goodale argue that while ventral processing is typically conscious, dorsal is unconscious. This view has been criticized both on empirical and on conceptual grounds (see for example Dehaene et al, 1998, Jeannerod 1997, see also Jacob-Jeannerod 2003 for a summary): it seems that dorsal processing can also be conscious if it interacts with ventral processing under some special circumstances. There also seems to be evidence that the ventral and the dorsal stream are not as independent from each other as it has been previously supposed: they routinely interact at various points of perceptual processing (see, again Jeannerod 1997 for a summary).

What is important for us is not the debate about whether, and to what extent dorsal processing interacts with ventral one and to what extent it can become conscious as a result. What matters from the point of view of the objection we're evaluating is that regardless of whether we accept Milner and Goodale's strict separation of conscious ventral vision and unconscious dorsal vision or we accept Jeannerod's more complex picture where dorsal processing can be made conscious, neither picture gives support to the claim that in the case of the unilateral neglect patients the conscious experience of shape and color is missing (or comes late) because of a breakdown in the ventral stream. The dorsal stream is either unconscious *per se* (as Milner and Goodale suggest) or can only be made conscious under special circumstances as a result of interaction with ventral processing (as Jeannerod suggests). Neither scenario is consistent with the suggestion that the dorsal stream can give us conscious experience of what an object can be used for in the complete absence of any conscious experience of its shape and color. If the objection works, it needs to work without the support of the ventral/dorsal distinction.

But there is a more important and more general problem with the second horn of the dilemma. If we accept this framework, where two separate subsystems are responsible for the phenomenology of action-properties and for the phenomenology of shape and color properties,

then we have no reason to suppose that one of these subsystems delivers perceptual, whereas the other delivers non-perceptual phenomenology.

Remember the first horn of the dilemma, where the picture was the following: the unconscious processing of the sensory stimulus at some point gives rise to the *perceptual* experience of shapes and colors. And this perceptual experience of shapes and colors gives rise to the *non-perceptual* experience of action-properties. As the experience of action-properties is the result of, and is based on, the experience of shapes and colors, it is possible that while the experience of shapes and colors is perceptual, the experience of action-properties is no longer perceptual. In this framework, we do have some (not conclusive) reason to suppose that the experience of action-properties is not perceptual: it comes after the perceptual experience of shape and color in the 'stream of consciousness' – the thought is that this stream will have left behind the perceptual realm by the time it give us the phenomenology of action-properties.

There is a transition from perceptual to non-perceptual phenomenology and there is also a transition from the phenomenology of shape and color to that of action-properties. If we accept the conceptual framework of the first horn of this dilemma, then it is still not clear which one of these transition happens first – nor I am sure what could provide evidence either way. But if these two transitions were to roughly coincide, then it would seem to follow that action-properties are not part of our perceptual phenomenology.

But, crucially, the second horn of the dilemma has nothing to do with this picture. If we go down the second horn, we have already accepted a picture where the experience of shapes and colors on the one hand and the experience of action-properties on the other come about independently of one another. But in this picture it is not clear why we should single out one, but not the other as perceptual. If we choose the second horn, we lose the (albeit questionable) intuitive pull behind the claim that action-properties are not part of our perceptual phenomenology that the first horn could rely on.

III. b. The second argument

There are some more general and more serious problems that the account according to which action-properties are not part of perceptual phenomenology faces. More precisely, the claim that action-properties are not part of perceptual phenomenology yields some very implausible consequences for the way we should describe the phenomenal character of the experience of unilateral neglect patients when they are performing the visual search task.

Again, the suggestion was that shapes and colors are unconsciously processed and action-properties are part of the patients' non-perceptual phenomenology. What about their perceptual phenomenology then? The objector is forced to conclude that these patients lack any perceptual phenomenology while they are performing this visual search task. The only properties they are aware of are action-properties, but these properties are, by supposition, not part of their perceptual phenomenology. This is an extremely problematic conclusion as these people are staring at objects, perform visual tasks with what they see, talk about what they see, manipulate what they see, and, importantly, consciously experience what they see, nonetheless, the objector needs to say that they lack perceptual phenomenology: there is nothing it is like for them to see these objects.

In other words, the objector is forced to say that it is possible to consciously see an object and nonetheless lack visual phenomenology altogether. If we allow for unconscious perception, it is possible to perceive an object without any accompanying phenomenology, but the consequence of denying that action-properties are part of perceptual phenomenology is something much more radical: it amounts to saying that it is possible to *consciously* perceive an object without any accompanying perceptual phenomenology – a claim that comes dangerously close to a straight

logical contradiction. As we shall see in the next section, there is an important debate in philosophy of mind about whether there are some non-perceptual states, more specifically, thoughts, that lack any non-perceptual phenomenology. If denying that action-properties are part of perceptual phenomenology forces us to postulate such empty perceptual phenomenology during conscious perception, then we have strong reasons to accept the claim that action-properties are indeed part of perceptual phenomenology.

The aim of this section was to show that the property of what an object can be used for is part of our perceptual phenomenology and thereby providing a case study for the methodology of deciding whether a certain kind of property is part of our perceptual phenomenology.

The more specific conclusion of this case study can, of course, be attacked: one can deny that unilateral neglect patients fail to experience shape, size and color properties (even though they say so and we have no behavioral reason to believe that they are wrong) or one can deny that the patients in the experiments in fact experience what an object can be used for (even though they say they do and we have fairly strong behavioral reason – the visual search – to believe that they are right).

But even if one of these objections seem tempting for someone, the main aim of the paper was to provide an unproblematic methodology for deciding what properties are part of our perceptual phenomenology. And even if the case study is based on false premises, it helps us to show what would count as evidence for concluding that a property is part of our perceptual phenomenology. More specifically, we can generalize from the unilateral neglect case study that if we find patients who are capable of experiencing property P without being capable of experiencing the low level properties of shape, size and color, then we have good reasons to conclude that property P is part of our perceptual phenomenology. If we want to know which properties are part of our perceptual phenomenology, we need to look for empirical studies of patients with brain lesions.

IV. Perceptual versus non-perceptual phenomenology

The aim of this paper was not only to argue that action-properties are part of our perceptual phenomenology but also to sketch the right methodology for drawing the distinction between perceptual and non-perceptual phenomenology. I conclude with some remarks on the relevance of this distinction for one of the most important debates in the philosophy of mind.

This debate is about whether all consciousness is perceptual (or quasi-perceptual). Some argue that phenomenology is necessarily perceptual phenomenology – the phenomenal character of non-perceptual states, such as thoughts or beliefs can be fully accounted for in terms of perceptual phenomenology (Carruthers 2005, Prinz 2007, Robinson 2005, Lormand 1996, Tye 1996, Nelkin 1996). Others deny this and argue that thoughts have distinctive phenomenology that is different from perceptual phenomenology (Pitt 2004, Siewert 1998, Strawson 1994, see also the majority of papers in Bayne and Montague in press).

It is unlikely that this debate can be settled without having a clear distinction between perceptual and non-perceptual phenomenology. Further, depending on what range of properties one allows to be part of perceptual phenomenology, the plausibility of the two competing views may change. If only shape, size and color properties are part of perceptual phenomenology, then the view about the distinctive phenomenology of thoughts may be more tempting, whereas if we allow a wide range of properties to be part of perceptual phenomenology, the view that all consciousness is perceptual may seem more palatable. In other words, we need an unproblematic distinction between perceptual and non-perceptual phenomenology in order to even engage with this debate. The aim of this paper was to sketch a possible methodology for doing so.

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