Concepts as soft detectors − On the role concepts play in perception

CrossMark

Paweł Grabarczyk

University of Lodz, Kopcinskiego 16/18, 90-232, Lodz, Poland

A B S T R A C T

The idea that concepts play a significant role in some perceptions is widespread but everybody seems to differ as to where to draw the line. Some researchers say that the difference between direct and indirect, concept driven acts of perception manifests itself whenever we perceive abstract or general properties. Others point at second order properties or causal properties. I call this inability to precisely differentiate between acts of direct and indirect perception "The Division Problem". Furthermore there is always a question as to how widespread indirect perceptions are. Can we attribute them to pre-lingual cognitive systems? I call this second problem "The Distribution Problem".

The main aim of the paper is providing a solution to both problems by proposing a naturalistic explication of the notion of "concept".

I propose to identify the role concepts were supposed to play in perception with a mechanism of "soft detection". Unlike hard detectors which react to a specific target in virtue of their constitution and placement in the system, soft detectors are understood as dynamic categorization devices enabling the cognitive system to selectively react to an undetectable property via flexible exploitation of data from hard detectors.

I conclude by showing how the notion of soft detection retains some of the aspects traditionally attributed to concepts and how does it differ from similar accounts known from contemporary literature.

© 2015 Elsevier Ltd. All rights reserved.

1. Two problems of perception

The idea that concepts[1] play a significant role in at least some acts of perception is definitely quite old and can be traced back at least to Descartes. In a famous passage he realizes that a piece of wax he looks at isn't literally "seen" because what can be literally seen is a set of simple properties and not a complex property like "being a piece of wax." The passage ends with a simpler and even more persuasive argument. Descartes notices that saying that he "sees" people on the street is somewhat risky, as they might just as well have been automatons dressed as people (Descartes, 1996, p. 21). The property of "being human" isn't something one can observe with a naked eye, one needs the help of one's mind's eye, or at least that's how the story goes.

Even nowadays this intuition is rather widespread but everybody seems to differ as to where to draw the line. For example Galen Strawson (1994, p. 4) describes seeing as if deploying concepts in perception was a standard procedure. This line of thinking goes back to the attack on the myth of the given by Wilfrid Sellars (1956) and seems to be

---

E-mail address: pagrab@gmail.com.

[1] As Machery points out "concepts" are best understood as an umbrella term. What I mean by "concepts" from now on is the specific notion used in context of perception, which is roughly equivalent to "categorization device". This pretty broad sense is compatible with how most psychologists and traditional philosophers of mind have used the word (Machery, 2011, p. 31). It is worth noting that "categorization" should be understood in a very basic sense: as identification as a member of a class and not as predication or any other sophisticated cognitive operation (for the more sophisticated sense of categorization see Millikan, 2004a, p. 71).

still popular today (Goff, 2012). Some researchers resort to notions of generality or abstractness (Block, 2008, p. 307; Grush, 2007, p. 504) — as if we were supposed to be able to see without concepts as long as the term referring to the object we see isn't abstract or very general. For example, Dretske (2002) argues that we don't have to know that something is an armadillo (and thus use the concept of armadillo) to see an armadillo on the road, but he is not so sure about the possibility of seeing an armadillo on the road without knowing that it is an animal (and thus having the concept of "animal"). Along somewhat similar lines Millar (1991) argues that we cannot perceive a pumpkin without a corresponding concept.

Sometimes generality and abstractness are invoked directly (see Murphy & Medin, 1985 or Gelman & Markman, 1986), sometimes they are implied in examples or experiments (Mandler, 2003). Some researchers seem to think that concepts enter the picture when the observer displays the ability to perceive second-order properties (Wasserman, 2002), kind properties (Siegel, 2006) or causal properties (P. Strawson, 1985; Taylor, Hunt, Medina, & Gray, 2009). In the spirit of British empiricists and early positivists, perceivable properties are often divided into simple and complex and seeing the latter is supposed to involve concepts. But the division is typically either vague or seems highly arbitrary (Armstrong, 1993, p. 235).

The dichotomy I am interested in is often indicated by a linguistic difference, between a simple act of "seeing" and a complex, conceptually loaded act of "seeing as" (Dretske, 1995, p.65).[2] Needless to say, showing that the vague difference has a linguistic counterpart does not solve the problem. Let's call this inability to settle on the boundary between simple and complex perception "the Division Problem".

The Division Problem is more strongly emphasized when we move from people to different cognitive systems. We do not have to go very far; it is enough to turn to descriptions of perception in non-human animals and infants. Consider the following simple argument:

A dog sees the postman
The postman is the best chess player in the city
Thus, the dog sees the best chess player in the city.

Needless to say, the argument is formally valid but one may nonetheless refrain from accepting the conclusion.[3] One might say that the conclusion is just a shortcut for something like: "the dog sees the postman we know to be the best chess player in the city" because to see the best chess player in the city implies, among other things, having the concept of chess. But then again doesn't seeing the postman imply having a bunch of concepts that are probably too complicated for a dog to grasp, like a concept of a letter or a post office? So maybe

the only thing the dog can see is a man dressed in a particular way? But then again — what exactly do dogs know about dressing? In fact, as I argued elsewhere (Grabarczyk, 2013), once you go this route you might find yourself questioning animals' ability to see any objects at all (as opposed to seeing properties or events). The less complicated cognitive system you choose, the more aggravating the problem gets. Even if you wished to bite the bullet and decided that dogs do have the concept of chess you might start to hesitate when we switch dogs to fish, insects or simple artificial systems. In other words, even if indirect, concept driven perception exist, we have no clue as to how widespread it is. Let's call this problem "the Distribution Problem".

The Division Problem and the Distribution Problem shouldn't be confused with each other. They are obviously connected but nonetheless distinct. It could turn out that the solution to the first problem gives us the tools to differentiate between direct and indirect perception but only for complex cognitive systems; for example, it might turn out that the solution depends somehow on verbal reports from the perceiver. Alternatively it may turn out that indirect perception is possible only with complex systems (which solves the Distribution Problem) but that we are still unable to differentiate between direct and indirect perception (and are unable to solve the Division Problem).

Note that the Division Problem cannot simply be solved by appealing to a difference between subpersonal and personal perceptual states. At first glance it might be tempting to identify states of direct perception with sub-personal states. The temptation arises because the distinction between subpersonal and personal states is definitely more clearly drawn than the difference between direct and indirect perception. But there are several reasons not to go this route. First of all, the examples of direct, nonconceptual perception, like perception of colors, simple shapes etc., that have been indicated in the literature since Locke, are all examples of personal states. Second, there is nothing in the idea of a subpersonal state that prevents it from being determined by higher cognitive capabilities.

It might be tempting to decide that the whole dichotomy is ill-posed and should be abandoned altogether, but the options we are then left with aren't very attractive either. Should we decide that perception is in every case conceptually indebted and most creatures simply do not perceive in the sense we, as concept users, understand it (Carruthers, 1989)? Or maybe we should go the other route and decide that perception is always direct and no one ever really needs concepts in perception? That is why I prefer to give the dichotomy between direct and indirect perception a chance by introducing a naturalistic explication of the notion of concept. I propose this in section 2. In section 3 I show how it can help us to solve both the Division and the Distribution problem as well as why it retains some of the intuitions associated commonly with concepts. In the last section i show how my notion of concepts differs from some of the similar ideas in the contemporary literature.

2. Soft detectors

All natural and artificial cognitive systems cannot be isolated from the environment and have to employ some

---

[2] "Seeing as" should not be confused with "seeing that." For a useful discussion of the latter see Crane (2009).

[3] The reason for this is that at least some uses of the verb "to see" create an intensional context (Anscombe, 1965). I do not discuss this problem in this paper but see (Grabarczyk, 2014) for a possible extensional explication of the term "to see". This problem can be also analyzed using *de dicto/de re* distinction.