

Attention and Perceptual Justification

The aim of this paper is to give an explanation of perceptual justification, the kind of justification coming from the senses (what we see, hear, touch, and the like). I am interested, on the one hand, in the empirical results given in cognitive science regarding selective mechanisms in perception. And on the other hand, my interest focuses on an externalist theory of justification, namely Proper Function as it has been proposed by Michael Bergmann (2006). The result is the defence of a Proper Function account of epistemic justification supported by empirical research.

The Proper Function theory of epistemic justification holds that a subject is justified if and only if the cognitive faculties producing the belief are functioning properly, truth-aimed, reliable in the environments for which they were “designed” and, the subject does not take the belief to be defeated (Bergmann, 2006, 133). The main characteristic of this account is that the proper function of a cognitive system is to produce true beliefs. I support that this function has two features: not only the cognitive system is responsible for the formation of true beliefs but also is responsible, at least in some way, for the perceptual experience the subject has.

Perceptual beliefs are formed on the basis of perceptual experiences and the latter are produced by a perceptual system guided by some cognitive mechanisms. The richness of perceptual experiences is determined by both a perceptual system and the structure and aims of the subject’s cognitive system. That supposes a weak cognitive penetrability of perceptual systems Pylyshyn (1999, 2003); Raftopoulos (2009). The mechanism that allows to determine the richness of the subject’s perceptual experiences is *attention*. Put it other way, the proper function of a cognitive system is composed by the function which makes perceptual experiences available to the subject (i.e. attention) and, the function to produce true beliefs on the basis of these perceptual experiences.

The physical world presents to the subject far more sensory inputs (such as objects in the visual scene, voices or sounds in the auditory array, and so on) than her perceptual system can effectively process. Some of this environmental information is relevant for the current behaviour and aims of the subject, but some other information is irrelevant. Given that our cognitive resources are limited, the perceptual system does not have the capacity to process all the inputs that impact simultaneously the retina, the ear, the skin and so on. Therefore, *attention* is the process that selects some inputs over another for more thorough processing.

Attention is a selective mechanism which picks out some information from the environment, which is relevant for the subject and leaves out the irrelevant information. The role of this selective mechanism is to make available for further processing the kind of information needed at every moment according to the behaviour and aims of the subject (Allport, 1980; Pashler, 1998; Pylyshyn, 2003; Styles, 2005, 2006). There is evidence to support that attention makes the perceptual items consciously (Simons and Rensink, 2005; Prinz, 2010; De Brigard and Prinz, 2010) and mnemonically (Lamme, 2000, 2003, 2004) available.

Attention can be influenced both by a stimulus (*bottom-up*) and by the subject’s aims

(*top-down*). The information selected by attention is stimuli driven (bottom-up guided) when attention is automatically captured by the “salience” of the stimulus present in the visual scene. E.g. lightning (the salient stimulus) on a dark night (a black background) captures our visual attention automatically. Attention is cognitively driven (*top-down* guided) when it allocates mental resources to different items according to the observer’s goals.

An example of the attentional process is easily observed when you are reading this letters. The words printed in that page are relevant to the activity of reading, however the perception of the table in which the page lies on (or the computer in which the page is displayed) is not pertinent for the task of reading. The role of attention when you read this page is to select the words on the page and to filter out other irrelevant perceptual information such as the table, the computer, the coffee cup, and so on. In this case, attention is cognitively driven in order to select some aspects of the visual scene (the letters) according to the subject’s interests. That is the information that the subject’s perceptual experience will carry on the basis of which a perceptual belief will be formed.

The proper function of a cognitive system consists, first, in cognitively guiding attention to select from the perceptual scene the relevant perceptual information for the subject’s aim in order to form a perceptual experience and, second, in forming a belief on the basis of this experience. If that account is right, the justification of perceptual beliefs in a proper function account will narrowly depend on the aims and cognitive background of the subject.

Encompassing both selective attentional processes and proper function has two virtues: from an epistemic point of view, my proposal is able to explain what the proper function of a system is (i.e. to produce true beliefs) and why a belief is justified (i.e. because of the way in which the experience is formed according to the subject’s aim). From a psychological perspective, my proposal is able to explain what the mechanisms that handle successfully that aim are (i.e. selective attention and the subject’s cognitive background). Moreover, the explanation has another virtue, contrary to internalist theories of justification, it shows that the formation of beliefs and their justification are intrinsically related, both depends on a cognitive system functioning properly.

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