Consciousness and Cognition 55 (2017) 79–90

Contents lists available at ScienceDirect

Consciousness and Cognition

journal homepage: www.elsevier.com/locate/concog

Consciousness operationalized, a debate realigned

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ARTICLE INFO

Keywords:
Access consciousness
Amodal experience
Cognitive phenomenology
Hard problem
Phenomenal consciousness
Zombie

ABSTRACT

This paper revisits the debate about cognitive phenomenology. It elaborates, defends, and improves on our earlier proposal for resolving that debate, according to which the test for irreducible phenomenology is the presence of explanatory gaps. After showing how proposals like ours have been misunderstood or misused by others, we deploy our operationalization to argue that the correct way to align the debate over cognitive phenomenology is not between sensory and (alleged) cognitive phenomenology, but rather between non-conceptual and (alleged) conceptual or propositional phenomenology. In doing so we defend three varieties of non-sensory (amodal)[1] non-conceptual phenomenology: valence, a sense of approximate number, and a sense of elapsed time.

1. Introduction

The debate over cognitive phenomenology is often construed as a debate about whether thoughts and concepts have phenomenal properties that are irreducible to broadly sensory ones. (There may be a number of ways of characterizing what counts as "broadly sensory". We return to this question in Section 3.5.) On the one side, so-called *conservatives* about cognitive phenomenology claim that only sensory states are phenomenally conscious (Carruthers, 2000; Jackendoff, 1987, 2012; Prinz, 2012; Tye, 1995, 2000). By contrast, so-called *liberals* maintain that the phenomenology associated with thoughts and concepts can't be fully reduced to broadly sensory phenomenology (Strawson, 1994, 2011; Siewert, 1998, 2011; Pitt, 2004; Chudnoff, 2015a,b; Kriegel, 2015; McClelland, 2016).

Liberal arguments take a number of forms, but many of them appeal to intuition or to the existence of phenomenal contrasts. For example, they invite us to reflect on the difference in experience between a French speaker and a non-French speaker listening to one and the same sentence (that is, with and without understanding). Conservatives, however, typically agree that there are such differences, while pointing out that there will be many disparities in *sensory* phenomenology caused by underlying differences in understanding. For example, linguistic competence will have an impact on how the phonology of the sentence is represented, and understanding may be accompanied by a suite of imagistic and affective differences, all of which can count as sensory. The phenomenal differences between the two speakers listening to the same sentence, the conservative concludes, are ultimately reducible to broadly sensory phenomenology.

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[1] Note that the term "amodal" admits of two quite different uses in cognitive science. One (the one we intend) refers to processes or representations that are neither sensory-specific nor multi-sensory (or "multi-modal") in nature. We assume throughout that concepts are amodal in this sense. The other use is the one that figures in the phrase "amodal completion" in vision science. This refers to the construction by low-level visual processes of an imaginary boundary of a partially-occluded object. The contrasting sort of completion – "modal completion" – refers to the construction of an imaginary boundary of the presumed occluding object. Both are exemplified in the famous Kanizsa triangles. Moreover, both are modality-specific (specific to the visual system) in our intended sense of "modal".

http://dx.doi.org/10.1016/j.concog.2017.07.008
Received 22 January 2017; Received in revised form 26 June 2017; Accepted 20 July 2017
Available online 10 August 2017

The mere existence of phenomenal contrasts between understanding and not understanding a sentence doesn't settle the question of cognitive phenomenology, then. Neither do straightforward appeals to intuition, which aim to support a liberal position by urging us to *introspect* on the phenomenology associated with thoughts or concepts (such as the phenomenology associated with the thought that I have found my keys). Instead, the arguments on either side are best construed as forms of inference to the best explanation (Bayne & Montague, 2011, 22). What must be shown is not simply that there *are* contrasts of the sort described, or that our thoughts are *associated with* phenomenology, but rather that liberals can provide a better explanation of these facts than can conservatives. Indeed, as Chudnoff (2015a) points out, the liberal's claim about the irreducibility of cognitive phenomenology is actually a "(i) logically complex, (ii) generalization about (iii) possible (iv) explanatory relations" (24). It seems quite unlikely that the truth of such a generalization could be revealed by the mere existence of phenomenal contrasts or by introspection alone.

Given that what is at stake is the best explanation of the contrasting cases, or of the deliverances of introspection, it is worth stressing that this makes the conservative position the default. Since *everyone* accepts the existence of sensory phenomenology, it is simpler to maintain that there is *only* sensory phenomenology, in the absence of something that cannot be explained adequately in those terms. The point here is an entirely general one about inference to the best explanation. Explanations, in general, are better if they are simpler, requiring us to postulate fewer types of entity or kinds of property. Since conservatives and liberals offer competing explanations of the phenomenology distinctive of thought, and since everyone accepts the sorts of sensory phenomenology that conservatives appeal to in their accounts, the onus is on liberals to make their case. To be a liberal means accepting a novel set of phenomenal properties, and this needs justification. Liberals *claim* to have found something beyond the sensory phenomenology that everyone accepts, of course, but they have failed to convince their opponents of what that might be.

In Carruthers and Veillet (2011) we proposed a way forward, inspired in part by Bayne (2009). We suggested that an independent test for the presence of phenomenology of any specific sort is to consider whether it gives rise to (or at least *seems* to give rise to) thought experiments of the "hard problem" sort (Chalmers, 1996), thus setting up at least the appearance of an "explanatory gap" between physical and functional facts, on the one hand, and the properties in question, on the other. We argued (and continue to maintain) that our proposed operationalization is a reasonable one. For what could be the point of describing some state or property as *phenomenally* conscious if it didn't give rise to any hard-problem-type thought experiments? Indeed, it seems us that it is the mark of phenomenal consciousness (as opposed to mere access-consciousness) that it naturally raises (or at least seems to raise) a set of *hard epistemic problems* – problems that other aspects of our mental lives don't give rise to (including any aspects that are merely access-conscious but not phenomenally conscious). This doesn't require us to claim that the explanatory gap is real or insuperable, of course; let alone that it supports any form of metaphysical dualism. In fact, our proposal was intended as a test for the presence of phenomenal consciousness that could be neutral between all of the opposed positions about the nature of consciousness.

At around the same time a number of philosophers arrived at very similar ideas (Horgan, 2011; Kriegel, 2009), and in the ensuing years other contributors to the debate have embraced and further developed this kind of proposal, suggesting that the presence or absence hard-problem-type thought experiments can be used as a diagnostic tool for the presence or absence of any disputed sort of phenomenology (Kriegel, 2015; McClelland, 2016). We think, however (and will argue here), that in some cases the test has been misapplied, and that when used properly it leads to a more nuanced position – indeed, to one that vindicates neither conservatism nor liberalism as these positions have traditionally been understood in the existing debate.

In Section 2, we revisit our proposal. We begin by responding to recent criticisms aimed directly at our earlier use of hard-problem thought experiments (McClelland, 2016). We then discuss the further use made of such thought-experiments by Horgan (2011) and McClelland (2016), who rely on them to defend liberalism about cognitive phenomenology (specifically, the phenomenology of understanding what someone is saying). Our critique will find a new use for the familiar distinction between *access*-consciousness and *phenomenal* consciousness (Block, 1995).

In Section 3 we use our operationalization of phenomenal consciousness in constructive mode, arguing for a realignment in the debate over cognitive phenomenology. Conservatives are normally said to endorse only *sensory* phenomenology (understood broadly, to include proprioceptive and interoceptive sensations, as well as affective states in general), whereas liberals are said to believe that thoughts and other states with conceptual or propositional content have phenomenology that is irreducible to anything broadly sensory. We argue, in contrast, that there are at least three sorts of amodal, non-sensory, but nevertheless non-conceptual kinds of phenomenal state, including (a) the valence component common to all forms of affective state, (b) our experience of approximate number (generally called "numerosity"), and (c) our experiences of time and temporal distance. We suggest that all and only non-conceptual states are phenomenally conscious (when access-conscious), no matter whether those states are sensory or not.

In Section 4 we turn to what is arguably the most sophisticated and challenging argument for a strongly liberal position, due to Kriegel (2015). He imagines the case of Zoe, who not only (like a zombie) lacks sensory phenomenology, but lacks sensory states altogether, in all sensory modalities. However, Zoe is still said to be capable of cognitive phenomenology resulting from her purely intellectual work as an accomplished mathematician. We argue that the forms of phenomenology that might plausibly remain in the case of Zoe can successfully be explained in terms of the kinds of amodal non-conceptual states defended in Section 3. Section 5 is our concluding discussion.

Before we get to our main discussion, however, we should say something further about the conceptual/non-conceptual distinction, since this will figure prominently in what follows. We take the basic contrast to be one between representations that involve categorical boundaries of some sort (or are "chunked"), and those that are fine-grained or continuous (or "analog") in nature. This