

in a *global workspace* (Baars 1988; 1997), Block takes *e* to be access conscious if and only if conceptual representations of *e*'s content are present in the global workspace. In other words, *e* is access conscious if and only if there are conceptual representations in the global workspace that extract the content of *e* (e.g., "There were rectangles of the following orientations...").

That typically we are not access conscious, in the sense described above, of *all* aspects of a phenomenal experience's content is convincingly shown by the Landman et al. (2003) experiments. After the brief exposure, subjects are only able to report on the precise orientation of up to four of these rectangles. These experiments show, to my mind conclusively, that access consciousness of this sort – that is, the existence of conceptual representations in global workspace that extract all the relevant content of *e* – is not constitutively necessary for the phenomenality of the experience. This finding is further supported by the neurophysiological data Block cites, which show the neural implementation of sensory representations and the neural implementation of global access to be physically separate and independent from each other.

However, these experiments – which comprise the bulk of Block's supporting evidence – do not show that *no* access is constitutively necessary for phenomenality. Notice that the aforementioned interpretation of these experiments crucially relies on the subjects' introspective report of the phenomenality of their *entire visual experience*, including those aspects of the experience whose content is not access conscious. Introspective access to the phenomenality of the entire experience was part of the evidence in the Sperling and the Landman et al. experiments for why access to the *conceptualized content* of the experience is not necessary for phenomenality. But these data leave room open for the hypothesis that access to the *phenomenality* of the experience is constitutively necessary for that phenomenality. How exactly should we think about access to the phenomenality of the experience if it is not access to its conceptualized content?

Notice that the representations in the global workspace that are not constitutively necessary for phenomenality are *separate from* the representations whose phenomenality is in question. Phenomenal experience quite plausibly involves non-conceptual representation; representations that enter the global workspace, on the other hand, are conceptual representations. There are different representations involved. What about access to the *phenomenality* of the experience itself? It seems plausible that the relationship between phenomenality and the representation of it that is in the global workspace is more intimate. Here is an idea: Perhaps phenomenality requires that a *conceptual* representation of the *phenomenal character* of the experience, more precisely, a judgment to the effect that the relevant phenomenal experience occurs, itself is in the global workspace. Plausibly, this would not involve any old conceptual representation of the phenomenality of the experience, but a *phenomenal* representation involving phenomenal concepts. There is a plausible account of phenomenal concepts, the *constitutional account* (see, e.g., Papineau 2002), according to which phenomenal concepts – in their canonical, first person, present tense applications relevant to these experiments – are partly constituted by the *experience* they refer to. That is, the first-person, present-tense judgment that *e* has phenomenal character *p* is partly constituted by *e* itself. Notice that here the experience whose phenomenality is at issue and the state in the global workspace that constitutes access to it are not separate and independent. The conceptual representation in the global workspace involves *e* itself and this adds to the plausibility of the idea that this kind of access is intrinsic to phenomenality.

Unlike the thesis Block is criticizing (let's call it the Access_c thesis), this thesis (let's call it the Access_p thesis) seems to be a viable hypothesis. None of the data discussed by Block rule it out, or even make it implausible. But if the Access_p thesis is true, then some interesting consequences follow – for example,

that despite suggestions to the contrary by Block, activations in the "fusiform face area" of "visuo-spatial extinction" patients, or any other early visual state that is not access_p conscious, could not be phenomenal.

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NOTE

1. I want to sidestep the issue of representationalism about qualia here. All I assume is that *e* has *r* and *p*; I won't discuss the relationship between *r* and *p*.

Psychology supports independence of phenomenal consciousness

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Abstract: Inference-to-best-explanation from psychological evidence supports the view that phenomenal consciousness in perceptual exposures occurs before limited aspects of that consciousness are retained in working memory. Independently of specific neurological theory, psychological considerations indicate that machinery producing phenomenal consciousness is independent of machinery producing working memory, hence independent of access to higher cognitive capacities.

Ned Block argues, "the machinery of cognitive access is not included in the machinery of phenomenology" (target article, sect. 9, para. 13). His argument is plausible, but I think psychological considerations support his conclusion, independently of neurological conjecture.

The view that all consciousness must be available to higher cognitive faculties is motivated by worry that without "reportability," consciousness cannot be studied scientifically. Either the view tries to rule apriori on empirical matters – how could it be apriori that animals that lack propositional attitudes cannot feel pain? – or it envisions too narrow a range of possible empirical evidence. Block has widened the range. Here, I think he underplays psychological considerations.

In the Sperling (1960), Landman et al. (2003), and Sligte et al. (2008) experiments, subjects, using iconic memory, take themselves to have seen a relatively specific number of items, experimentally investigated to have been in the 8 to 32 range. The items are displayed long enough for normal perceptual processing to be completed. In any given trial, using working memory, subjects can make use of information on only four instances of *specific types* of items, say, specific alphanumeric characters. They can do this for specific types of *any* 4 of 8 to 32, if cued *after* presentation.

I believe these experiments support two conclusions: (a) In any given trial, there are phenomenally conscious perceptions of specific types of items not accessed by working memory; and (b) causal machinery produces specific types of phenomenal consciousness on given occasions, but on those occasions does not register those types in working memory.

Block accepts, but does not highlight, conclusions (a) and (b). He argues for a stronger conclusion: (c) The machinery of working memory *does not overlap* the machinery of phenomenal consciousness. He reaches this third conclusion in three steps. First, he holds that if one accepts the Sperling-type experiments at face value, the minimum concessions required of someone who believes working memory (and through it, "reportability") is constitutive to phenomenal consciousness are: (d) "the 'capacity' of ... the visual

phenomenal memory system, is greater than that of the working memory buffer that governs reporting” (sect. 9, para. 11), and (e) “the machinery of phenomenology is at least somewhat different from the machinery of cognitive accessibility” (sect. 9, para. 13). (That is, (a)-(b) entails (d)-(e), but not vice-versa.) Second, he argues for accepting Sperling-type experiments at face value. Third, he invokes neurological conjecture to support (c).

One might accept (a)-(b) and (d)-(e), but insist that working memory and “reportability” are constitutive to phenomenal consciousness. One might hold that although *some* specific phenomenally conscious items do not appear in working memory, *all* phenomenal consciousness depends constitutively on some items’ being accessible to working memory. Block marshals neurological considerations for (c) against such a position.

In his second stage, Block opposes Dehaene’s attempts to avoid taking Sperling-type experiments at face value. Block effectively criticizes postulating what he calls a refrigerator-light illusion, and points out that it is question-begging to invoke “change-blindness” to support the position that the subjects in Sperling-type experiments are under an illusion that they had phenomenal experiences of items that do not appear in working memory. The two cases are disanalogous in a way that Block does not note. On Dehaene’s view that Sperling-type subjects are phenomenally conscious only of items actually in working memory, the subjects cannot have had, before the cue that selects those items retained in working memory, a phenomenologically conscious perception of *any* of the specific 8–32 items that they seem to have experienced. On that view, subjects’ sense of having consciously perceived even specific retained items before they appear in working memory is illusion. No one postulates analogous total illusion in “change-blindness” cases. Even proponents of the (I think mistaken) view that items that change unnoticed are not consciously seen do not claim that *nothing* is consciously seen.

I believe that Sperling-type experiments support (c), not just (a), (b), (d), (e). I argue by dilemma. If retained and unretained items are held *not* to be conscious before any items are retained in working memory, what is the evidence that memory of their having been conscious is total illusion? Exposure is long enough for perceptual processing to be complete. Why should phenomenology, even of specific retained items, have been missing? We have independent evidence about working memory. It does have constructive functions: making consciousness more vivid, rehearsing to facilitate retention and reproduction of imagery (Andrade 2001; Pearson 2001). But its primary function is to preserve perception already formed. Holding that its preservations convey systematic illusion is ad hoc. The fact that subjects seem to remember having seen all items, and could be cued to retain any item specifically, supports believing that even specific unretained items are phenomenally conscious. Now suppose that all, or at least the retained, specific items are held to be conscious before being preserved in working memory. What is the evidence that mere accessibility to working memory is constitutive to their being occurrently conscious beforehand? Such a view labors under heavy empirical burden. Consciousness is an occurrent, not a dispositional, condition. We have no good idea how mere dispositional accessibility to working memory could be causally necessary to *occurrence* of consciousness *before* working memory operates. Why should the door’s being open matter to the occurrence of something that does not use the door until after it already occurs? Such a view would require very special evidence and explanation. In the absence of specific empirical support, the idea is not a serious contender. The best explanation of current evidence is that conscious perception of the specifics of items later retained, indeed of all 8–32 items, occurs independently of working memory. The machinery of phenomenal consciousness appears to be independent of the machinery of working memory. Conclusion (c) is supported independently of Block’s neurological conjecture.

Further evidence for (c) may lie in the formation speed of at least *generic* phenomenally conscious aspects of visual

perception. Some super-ordinate object categorization occurs in less than 150 msec – before a signal even reaches working memory (VanRullen & Thorpe 2001; Rousset et al. 2004a; 2004b). Such considerations are tentative. But it is important not to be *so* fixed on neurological matters that one underrates the force of psychological considerations in supporting psychological conclusions.

Do we see more than we can access?

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Abstract: One of Block’s conclusions, motivated by partial-report superiority experiments, is that there is phenomenally conscious information that is not cognitively accessible. We argue that this conclusion is not supported by the data.

Block’s overall argument appeals to the lemma that “in a certain sense phenomenal consciousness overflows cognitive accessibility” (target article, Abstract), which Block takes to be supported by Landman et al. (2003) and Sligte et al. (2008). (For reasons of space we will ignore the latter.) Block summarizes his discussion of these two papers as follows:

The main upshot of the Landman et al. and the Sligte et al. experiments (at least on the surface – debunking explanations will be considered later) is along the same lines as that of the Sperling experiment: The subject has persisting experiences as of more specific shapes than can be brought under the concepts required to report or compare those specific shapes with others. (sect. 9, para. 10)

Thus, in the first condition of the Landman et al. experiment, Block holds that the subjects have persisting experiences as of [a circle of] eight rectangles, with the horizontal/vertical orientation of each rectangle specified. And if that is so, then, as Block says, the subject’s experiences are not completely accessible, because the subjects can report the orientation of only four (or so) rectangles.

Although most of Block’s discussion is couched in terms of “phenomenal consciousness” and the like, for present purposes we can talk instead (as Block himself sometimes does) of what the subjects see. Put this way, Block’s claim is that the subjects continue to see each rectangle as oriented horizontally or vertically after the stimulus has been replaced with a gray screen. In the terminology of Coltheart (1980), this is an example of *visible persistence*.

Coltheart distinguishes *visible persistence* from *informational persistence*. The latter is defined not in terms of seeing, or phenomenal consciousness, but in terms of the persistence of rich visual information about a stimulus after it has been replaced. Sperling-type experiments show that stimulus information is held in a high-capacity but transient memory, and thus that there is informational persistence. One might hold that there is informational persistence simply because there is visible persistence; that is, stimulus information continues to be available because the subject continues to see the stimulus. Coltheart argues, however, that the phenomena are not connected so intimately. One consideration is that informational persistence lasts longer than a few hundred ms, the duration of visible persistence. (As Block notes, the duration of informational persistence found by Landman et al. is about 1,500 msec.)¹