

Should We Go with the Overflow? An Assessment of Block's Argument for Phenomenological Overflow

In this essay I will investigate whether the phenomenal/access distinction initially expounded in Block (1995), can be demonstrated by the phenomenological overflow argument (OA) provided in Block (2011), and I will conclude that both sides of the argument suffer from a false determination of the function of consciousness.

Block (1995) argues that consciousness is a hybrid concept which necessitates a further distinction to describe the kinds of processes and their inter-relations that are involved in functioning; he identifies two forms of consciousness - phenomenal, and access. Phenomenal (p) states can equate to perceptual, experiential and qualitative states, they are 'what it feels like' to be in a particular state. Block (1995) lists feelings, perceptions, sensations, desires, thoughts, and emotions as p-conscious properties (p. 230). Intentional differences also affect the p-conscious state, e.g., to see a cloud passing by a window moving from the left to the right is phenomenally different than seeing a cloud passing by right to left (*cf.* Block, 2007a, p. 276). A crucial feature of P-states is that their use is not essential to their existence, they are made available in the sense outlined in the Global Workspace Model (e.g., Baars, 1988), but are not necessarily broadcast. Conversely, access (A) states are always broadcast for cognitive processing. Block (1997) states that "a state is A conscious if it is poised for direct control of reasoning, speech, and action." (p. 159). A-states are always representational and transitive (unlike P-states which can be both, but need not be), and are akin to the executive processes studied by cognitive science. Consciousness research has long emphasized functional explanations which are restricted to the cognitive mechanisms underlying access to conscious content. The prevalence of this approach has led to an impasse as the foundational p-states, from which consciousness allegedly arises, have been overlooked.

There are implicit issues with Block's distinction which should be noted. First, regarding P-consciousness there is an overwhelming explanatory gap, especially when considering cases of P-states in the absence of A-states, as without access there can be no report of an experience. Block himself concedes that one can only point to these phenomena (2007a, p. 275), nevertheless, we can discern much about P-states by analogy to their respective A-states. Examples of P-without-A states are rife, e.g., the sudden realisation that there has been an on-going noise in the background that has just seeped into one's awareness. The problem with these examples is that it's impossible to say anything about what the noise was like before it became A-conscious. As such, one might assume that all A-unconscious states are by virtue P-conscious states, but in the example given above there was nothing that it was like to be unaware of the noise. The interactions of P and A-states can be confused, moreover, the role of unconscious processing can further confound our understanding of Block's distinct forms of consciousness. This led Cohen and Dennett to conclude that such a theory could never be verified or falsified as only A-states allow for empirical scrutiny (2011, p. 358).

Many cognitive mechanisms, such as working memory and visual attention have established capacities, they require access and are posited to be in stark contrast to P-states which have no discernible limitations. Proponents of OA hold that phenomenology is richer than we can know. This view posits that perceptual consciousness possesses a higher capacity than cognition, as such we receive far greater input than can be

reported and investigated. The argument stems primarily from the intuition that one can be aware of far more in a scene than is reportable. The Sperling experiment is often employed as the paradigmatic example of perceptual overflow (*cf.* Sperling, 1960). This experiment involves briefly displaying an array of letters to a participant (e.g., 4 items in 3 respective rows), they then fail to freely recall all of the items when prompted, however, can successfully report complete subsets when cued, indicating that they had in fact perceived all of the items consciously. OA is pivotal to Block's dissociation of access and phenomenal consciousness as two distinct forms of awareness, if his objectors succeed in positing some alternative hypothesis for the Sperling paradigm by appealing to unconscious processing or recategorizing phenomenal aspects as dependent on the access which supervenes upon them, then Block will have delineated a false and unnecessary boundary within consciousness (Carruthers, 2017, pp. 66-69).

Inattentional inaccessibility is offered as a refutation for OA, these objectors contend that the introspective judgement of seeing more than can be reported, as in the Sperling experiment, is merely an effect of the 'refrigerator light illusion'. In this view, overflow is merely a cognitive illusion, when attention is paid to a particular location one can see the items, creating the false belief that a representation for the unattended items was persisting unconsciously. The core of this illusion is easily demonstrated by staring at one spot of an ambiguous patterned stimulus, e.g., a pebbled driveway; the mind will unconsciously replicate the pattern that is being attended to over the entirety of the stimulus. Such unconscious processing is a means of limiting the attentional resources used when they are not required, whilst instilling the observer with the false sense that they are aware of all the driveway in view. Block (2011) argues that this is not the case in the Sperling paradigm as participants can remember the subsets when cued, yet Kouider et al., (2010) illustrate that subjects in Sperling-like experiments can mistake a flipped or rotated pseudo-letter in non-cued rows for real letters. Cohen and Dennett take this to mean that participants overestimate their own experiential contents (2011, p.360). Block, however, holds that this is due to the diminished icons from the reduced contrast and a backward mask that prevents retinal persistence of the icons (2011, p. 568). The latter of these arguments seems to undermine Block's own contention, his insistence on the need for there to be no masking suggests that perhaps participants are utilizing lingering after-images to access the items, thus undermining his own position.

The 'refrigerator light illusion' example illustrates the implicit issues of OA and what many believe to be the pitfall of the phenomenal/access distinction. There is the problem of reportability: one cannot report on a P-state without the implication of an A-state as description necessitates access. Similarly, one cannot give a report of an unconscious process, not because it is inaccessible *per se* (though some processes are), rather if access of the unconscious process has to be achieved to enable report then that report is no longer of an unconscious process, rather a process which has been forced into consciousness. For these reasons, Zeman claims that the phenomenal aspect of consciousness is incongruous with the methods of scientific inquiry and that what we experience without access thus "lies beyond the reach of scientific observation. If so, we may never be able to integrate consciousness fully into scientific theory." (Zeman, 2005, p. 8). Similarly, Lamme (2006) states that one cannot possibly know that they are having "a conscious experience without resorting to cognitive functions such as attention, memory, or inner speech" (p. 499). Block (2007b) asserts that reportability is not necessary for P-states, instead he favours cognitive accessibility as a test for the presence of p-states (p.

484). Due to these limitations of Block's distinction, however, many objectors employ unconscious processing or inaccessibility to explain away the possibility of p-states (*cf.* Block, 2011, p. 567 and p. 574).

I argue that these objections to OA are valid; however, I think that this is because the issue at hand (that phenomenology overflows access) cannot be settled by appealing to the Sperling experiment. Psychological experiments such as Sperling's (1960) are not well-suited for investigating the validity of P-states, nor even A-states, for several reasons. The issue of reportability has been previously discussed, but I also contend that most cognitive experiments deal primarily with memory or attention and do so by constructing specialized and focused paradigms that isolate these functions and create contexts which are far from real-life scenarios where p-states arguably dominate. Within these sparse paradigms, automaticity is often incited in the subjects, as unconscious processing has a greater capacity and speed for dealing with such stimuli. In my view, the Sperling experiment does not delineate between P-states and A-states, instead it illustrates the contrast between conscious and unconscious processing. Dijksterhuis and Nordgren (2006) list several advantages of unconscious over conscious processing. With unconscious thought individuals prove to be more efficacious in their organization of information in memory (p. 107), in their preferential evaluation of objects. Unconscious thought is more beneficial than conscious processing as it possesses a higher capacity (p. 97) and does not over-attend to any one feature of an object, thus creating less biased perspectives (p. 100). As cognition entails a multitude of simultaneous processes, they cannot all be conscious, thus parallel processing occurs (Ceylan et al., 2016, p. 36). Velmans (1991) concluded that semantic analysis does not need to be consciously processed as words presented to attended and non-selected channels "can be analysed for meaning in the absence of any ability to report them." (p. 654). This demonstrates the salience of unconscious processes in cognition and I suspect a similar effect occurs in the Sperling paradigm.

Although, the Sperling experiment may not be a good defence for the phenomenal/access distinction, the alternatives proposed by its objectors are no better, they simply brush the phenomenological aspects of experience under the carpet, opting to outline only what is measurable (and by virtue cognitive) and ignoring what is intuitively the majority of what it is to have any semblance of awareness. Cohen and Dennett (2011) wish only to identify consciousness with function, yet I have shown how a large proportion of functioning is carried out unconsciously. It would be a categorical error to associate consciousness only with function when unconsciousness clearly possesses a greater functionality than consciousness. As Velmans (1991) states:

"some processes operate either with or without accompanying awareness, including aspects of input analysis, memory and overt response. Consequently, these cannot require awareness for their operation... there is a sense in which the execution of none of these tasks is "conscious" (even if they are at the focus of attention, and are accompanied by awareness)." (p. 666)

It seems to me that proponents and objectors of OA suffer some confusion due to their respective notions of the function/purpose of consciousness. I propose instead that a better foundation from which to build from is the conception that a major role of consciousness is to further facilitate and justify unconscious processing in general. Cognitive scientists, in attempting to associate consciousness with memory, or attention or executive functioning, have demonstrated that we often operate more successfully through unconscious thought. This approach does not refute the phenomenal/access distinction, it merely expounds the advantage to

the system of limiting its own access to its internal processes. Similarly, it does not fall victim to some form of Epiphenomenalism which Block himself tries so adamantly to avoid as consciousness is not a causally inefficacious by-product of neurons firing, rather it is the final terminus within which any number of parallel cognitions may be rejected, further investigated, realized or asserted. Furthermore, consciousness can be categorized as the functional justification of heuristics, biases and the 'refrigerator light illusion', all of which allow for greater unconscious corner cutting processes. The p-states of consciousness seem intuitively obvious, however, the cognitive framework Block defines them within is incongruent with their properties. They are not representational in the same way as a-states: communication and reportability are compatible with a-states, whereas p-states are compatible with that which language is representative of - the immediate real experience of things.

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