

Consciousness and Information Processing: A reply to Durgin

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Durgin's (2002) commentary on our article provides us with an opportunity to look more closely at the relationship between information processing and consciousness. In our article we contrasted the information processing approach to interpreting our data, with our own 'scientific' approach to consciousness. However, we should point out that, on our view, information processing as a methodology is not by itself in conflict with the scientific study of consciousness - indeed, we have adopted this very methodology in our experiments, which we purport to use to investigate consciousness. Furthermore, Durgin's own review of the history of research on metacontrast (Lachter & Durgin, 1999) shows that some researchers investigating metacontrast also thought that they were in the business of evaluating the role of consciousness in accounting for their effects. Yet, there is no doubt that metacontrast research is a paradigm case of research generated from an information processing perspective. So, *prima facie*, investigating consciousness and using information processing methodology are compatible.

What is the issue between Durgin and us? In our article, our concern with the information processing perspective is not with it as a methodology but with it as a theory. When researchers propose that information processing theory can not only account for data like ours but also that such an account should be uniformly preferred to any account which invokes the concept of consciousness, then we must object. We view such researchers as engaged in "theoretical absolutism" or "sticking their head in the sand with respect to consciousness." Where does Durgin stand on this issue? After giving his own information processing account of our main data he asserts that this "information processing analysis is intentionally agnostic about consciousness because it is designed to give an account of the informational requirements of a cognitive task." (p. 3) It is this supposition that one can perform a purely information processing analysis of experiments like ours, without even considering whether consciousness plays a role in the task or not, to which we object. Durgin's commentary is a paradigm of this theoretical strategy.

Because our concern is with the development of a science of consciousness, our

conflict with Durgin comes down to this: should his information processing analysis, which is agnostic with respect to consciousness, be preferred to our own? This is not an objection to his explanation, per se, of the results, but to whether that explanation provides the most informed interpretation to the data.

To answer this question, in what follows, we will first look at Durgin's account to see how it achieves agnosticism on consciousness and, furthermore, whether that agnosticism is the most fruitful way to proceed in interpreting our data with respect to the issue of consciousness. Second, we will look at how Durgin proposes to dispose of our own analysis and whether it achieves its purpose.

In making this evaluation of Durgin's analysis versus our own, we propose to look only at the main finding in our experiment - what we call the Orwellian effect. Since both sides agree that our finding of a Stalinesque effect was unexpected and not clearly interpretable on either perspective, there is, as Durgin suggests, no point in making a "mountain" out of this "molehill." By contrast, the main Orwellian effect was predicted a priori and confirmed for most conditions of the experiment. Furthermore, it speaks directly to an issue of considerable importance to both sides - whether one can be conscious of an aspect of a stimulus and yet not remember that one was conscious of that aspect at a later time; or whether this is an irresolvable issue. Moreover, this result relates directly to the phenomena found by Lachter & Durgin (1999) in metacontrast for which their preferred interpretation does not require consciousness.

Here is Durgin's "information processing analysis" of our main results:

In order to decide whether the 'growing' line has reached a certain point, I have to know *whether* it has reached that point, not how. In the case of the lines that are presented all at once, this information ought to be available immediately -- not necessarily as a conscious percept, mind you, but as a piece of information of perceptual content. (p. 3-4)

We have no problem understanding the first sentence, and we would agree with Durgin on this point - see below. But what are we to make of the second sentence? "Available

immediately"? To whom, or what, and for what purpose? Presumably, it is available to the organism in order to make a response. But how can it be available "immediately"? And, how are we to understand "perceptual content" that may or may not be a "conscious percept"? Even assuming that the previous questions can be answered, this last one suggests that any strictly information processing analysis, at the least, must leave us with a mystery with respect to consciousness. But worse than this, agnosticism with respect to consciousness would seem to imply that consciousness cannot play an important role in rational judgments – because perceptual content alone that determines rational judgments. If that is not what Durgin means to assert here then we are puzzled as to what he can mean.

In answer to our own alternative interpretation that rational judgment *does* imply consciousness, Durgin asserts: "Even IF the content is stipulated to be conscious because it informed a rational decision (to press the button), it is still not evidence that there was an Orwellian event of conscious line-appearing-all-at-once seeing." (p.4) The point Durgin is trying to make here is that there is no requirement that the perceiver be conscious that the line appeared all at once. All that is required is that the particular content that the line appeared below a marker be noted. But why is this an attack on our account?

Earlier Durgin remarks about our view: "Indeed, they claim to have strong evidence that the Orwellian scenario has been played out: There really was a moment, they claim, when the line was consciously registered as coming on at once, but that moment expired and memory was overwritten by a later interpretation." However, this is not at all our claim. We do not claim that the perceiver consciously registers the simultaneous appearance of the whole line. What we claim is that it is the consciousness of the static line that determines their decision that the line has reached the marker, as opposed to the 'growing' line that appears to later phenomenology.

Here is the account of the Orwellian process that we give: "Participants will be able to use the early entry of the veridical line presentation into consciousness to make

decisions about whether there is a line under the marker, but will quickly forget that information as the illusion is formed." (p. 14) We do not state one way or the other whether consciousness of the veridical line will produce consciousness of the fact that the line came on all at once. This, of course, might be true; but, as Durgin suggests, it might not be true. Since we didn't ask the question of the participants, we remain agnostic on this issue. However, we are not agnostic on the issue of whether it is the static line or the 'growing' line, which is the basis of their rational decision. We propose that their decision was made based on knowledge gained from perceiving the relation between the marker and the veridical static line. This is what Durgin himself claims for the information processing analysis as perceptual content, though for us it is *conscious* perceptual content that is used for decision-making. It is from the fact that reaction times for different marker locations are the same that we can claim that participants' decisions were based on the veridical static line, not based on the phenomenal growing line. Hence, by using information processing methodology, but using it in a context requiring rational decisions, we believe that we can make scientific claims about consciousness.

Because Durgin's main objection to our theory is actually not against us, but against an account of his own fabrication, if he is to challenge our approach, it will have to be on grounds other than those presented in his commentary. He would have to justify claiming that rational judgments in our task do not require consciousness and that they are mediated by some alternative non-conscious process. In order to successfully achieve this goal, it is our view that he would have to renounce his agnosticism with respect to consciousness and join with us in our aim to evaluate consciousness as a process involved in human information processing activity.

References

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