

Counting consciousnesses: None, one, two, or none of the above?

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In a minute there is time
For decisions and revisions which a minute will reverse.

T. S. Eliot, "The Love Song of J. Alfred Prufrock"

In a second there is also time enough, we might add. In his dichotomizing fervor, **Bogen** fails to realize that our argument is neutral with respect to the number of consciousnesses that inhabit the normal or the split-brain skull. Should there be two, for instance, we would point out that within the neural network that subserves each, no privileged locus should be postulated. (Midline location is not the issue – it was only a minor issue for Descartes, in fact.)

As one of us (Kinsbourne 1982) has pointed out, it follows from the nonexistence of a privileged locus that the limit on the number of consciousnesses that could theoretically be housed in the brain (given suitable disconnections) is the minimal complexity of the neuronal substrate that suffices for this kind of functioning. There could be many, and certainly more than two. Not all these consciousnesses may be to **Bogen's** liking. Given a lateral (coronal) transection, the posterior sector may be precluded from controlling behavior, while the anterior one be sorely lacking in information to guide spared action. The separated left or right hemisphere, in contrast, is more fully equipped with input and output possibilities, depleted though they are.

Bogen claims that our argument "puts excessive emphasis on introspection." On the contrary, it goes further to discredit introspection than Bogen himself can countenance. What is the Multiple Drafts model if not a *denial* of the singularity of consciousness? In our view, Bogen's duality of consciousness is just as simplistic as Descartes' singularity. Our references to (apparently) unified normal awareness, to which Bogen takes such exception, are in the service of the very position that pleases him: the apparent unity is not a necessary reflection of any unity in the neuronal substrate. So Bogen's arrow misses its mark; or perhaps he was just using this occasion to ride his own, unrelated hobbyhorse.

Johnsen's point concerns a confusion about the stream (or streams) of consciousness. We speak of a "parallel stream of conflicting and revised contents" and he asks: parallel to what? Here is what we meant: the *apparently* single and unified "stream" is in fact composed of many different, largely independent, contemporaneously evolving content elements. These occasionally conflict with each other, occasionally mutually support each other. Coalitions of such elements take turns dominating their alternatives until they all fade away. That temporary

ascendancy is our substitute for the more traditional idea of an entrance into a privileged sphere or theater as the “mark” of consciousness or awareness.

Some commentators have wanted to read our substitute as a variation on, or version of, the traditional idea, and because the crucial difference is hard to keep in focus, we turn to an analogy that may help anchor the discussion – but only if the points of comparison are carefully marked.

You go to the racetrack and watch three horses, Able, Baker, and Charlie, gallop around the track. At pole 97 Able leads by a neck; at pole 98 Baker, at pole 99 Charlie, but then Able takes the lead again, and then Baker and Charlie run ahead neck and neck for awhile, and then, eventually all the horses slow down to a walk and are led off to the stable. You recount all this to a friend, who asks “Who won the race?” and you say, “Well, since there was no finish line, there’s no telling. It wasn’t a real race, you see, with a finish line. First one horse led and then another, and eventually they all stopped running.” The event you witnessed was not a real race, but it was a real event – not some mere illusion or figment of your imagination. Just what kind of an event to call it is perhaps not clear, but whatever it was, it was as real as real can be.

Notice, first, that verificationism has nothing to do with this case. You have simply pointed out to your friend that since there was no finish line, there is no fact of the matter about who “won the race” because there was no race. Your friend has simply attempted to apply an inappropriate concept to the phenomenon in question. That is just a straightforward logical point. You certainly do not have to be a verificationist to agree with it.

Notice that each horse’s career can be precisely tracked, including the spatio-temporal intervals during which it led (if it ever did). The same must be true, surely, for events occurring in the brain. At different times and places different contentful processes may dominate (“be in the lead”), but no such time or place is privileged (the “finish line”). What counts in the analogy as being conscious? Simply *running well* – contributing to the “dominant focus of neuronal activity” (Kinsbourne 1988) for some (unspecified) period of time. No doubt the property of *being in the lead* is a property which has precise temporal boundaries in the case of the horses, and its analogues in the brain may be presumed to be just as determinable (e.g., some property of *relative neuronal dominance*), but such domination does not confer some *extra* property of awareness (so that moving into the lead is becoming conscious, and ceding the lead is lapsing into memory or unconsciousness). The succession of dominance is what gives the stream of consciousness its seriality (such as it is), but it is a feature *within* the stream of consciousness, a sufficient but not necessary condition of being a conscious content.

Johnsen claims that a sentence of ours makes sense “only if read as saying both that there is an ‘order in which we experience events to occur,’ that is, a single subjective sequence, and that it differs from the order in which we experience the events.” This was not our intended reading (if it even makes sense). We said what we meant: the standard presumption *breaks down* – for quite mundane reasons. Of course we can specify times before consciousness of an item has begun and after which consciousness of that item has ceased, but it is in the nature of the

phenomena that this timing principle does not apply at all scales. Similarly, the standard presumption that political events can be put into a unique time sequence breaks down when we choose our events carefully. Which came first: Clinton’s victory or the closing of the polls? It is only those who have a “finish line” model of consciousness who cannot tolerate leaving such questions unasked and unanswered.

Revonsuo summarizes our replies to earlier commentators and says they are not very clarifying. He correctly analyzes Dennett’s position in earlier work, and sees that our joint view is consonant with it. As he says, subpersonal cognitive psychology “evades” consciousness, but this only means: don’t look for a consciousness module, any more than you should look for an honesty module or a shame module.

Revonsuo then asks some questions, to which we here supply the answers:

“Is consciousness, like belief, an observer-relative ‘calculation-bound entity’ or ‘logical construct’?” No, but heterophenomenological objects are (see Dennett 1991b). (Feenomanism [Dennett 1978; 1991b] is a perfectly real phenomenon – a religion – but Feenoman is not real.)

“Why do ‘microtakings’ have to have their effects on ‘guiding action’ before they can reach the status of consciousness?” It is not that microtakings must first have their effects on guiding actions and then acquire some additional property of consciousness; their having these effects is constitutive of their being conscious takings.

“Why is there ‘no crisp way of telling exactly which parts of the multiple parallel streams are conscious?’” Not, as Revonsuo surmises, because of observer-relativity, except in the minimal sense that it is the observers’ concept(s) of consciousness that break down (as noted above) at this point.

Revonsuo perpetuates one large (but common, and forgivable) misreading of Dennett’s position on observer-relativity and reality. Beliefs, according to Dennett, are quite real even if no one ever attributes them to their subject, and they are as discoverable-in-principle as genes, to use Revonsuo’s example. Notice, by the way, that this comparison is particularly apt. According to current thinking, there do not turn out to be any *Mendelian* genes – Mendel did not quite carve nature at the joints. So we face a terminological choicepoint: do we say there never were any genes or that genes turn out to be rather different from what their “discoverer” claimed they were? In fact there has been some heated disagreement among biologists, but the general trend certainly seems to be to keep the term “gene” and abandon Mendel’s definition. But in a free country (and science is a free country) this lexical decision could go either way.

To those critics who claim that we have not so much provided a model of consciousness as a denial of its very existence, we can reply, in a similar spirit, that we take consciousness to be rather different from what they think it is, but those who hate to see consciousness robbed of some of its “defining” properties can keep their “essences” if they insist – we will simply have to declare then that consciousness, so defined, does not exist. Something that is rather like *that* consciousness – enough like it to be called consciousness by the lexically lax! – does exist. That is a realistic variety of realism.

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