

Unity of Consciousness: What It Is and Where It Is Found

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Abstract

The unity of consciousness is our capacity to be conscious of a number of items all at once, in what could be called a single conscious act. Such unity is found in at least three places: consciousness of the world in general, consciousness of self in general, and paying focal attention to aspects of either. In all three, unified consciousness has both a synchronic and a diachronic dimension. That is to say, consciousness is unified both at a given moment and over time. Unified consciousness can be breached in two ways: by splitting (into two unified centres of consciousness, as in brain bisection operations) and by shattering (as in some severe schizophrenias and dysexecutive disorder). Studying it in its breakdown conditions is a good way to throw light on it. In this paper, we will delineate the unity of consciousness, explore some situations in which it breaks down, and relate it to some other mental unities.

1. Introduction One of the most striking features of consciousness is that what is presented to us in it is usually highly unified. This unity takes the following general form. We are conscious not just of individual objects but of a multitude of objects related to other objects in a multitude of ways. I am aware not just of A and, separately, of B and, separately, of C, but of A-and-B-and-C, all at the same time – or better, as all parts of a single complex object of a single conscious state. Since at least the time of Kant (1781/7), this unity has been called the *unity of consciousness*.

There has been a huge resurgence of interest in consciousness in cognitive science in the past decade or two. Here is how the philosopher Daniel Dennett summarized the attitude of the nonphilosophical part of the cognitive community two decades ago:

Consciousness appears to be the last bastion of occult properties, epiphenomena, immeasurable subjective states – in short, the one area of mind best left to the philosophers. Let them make fools of themselves trying to corral the quicksilver of “phenomenology” into a respectable theory. [1978, p. 149]

He could have added that this was pretty much true of most philosophers, too.

This situation began to change in the mid to late 1980s, due to the work of psychologist, Bernard Baars (especially 1988) and many others. (Baars developed the methodology called contrastive analysis, in which we compare the difference made by performing a task consciously and without consciousness. This method gave researchers a method to study consciousness much better than the

traditional appeal to introspection.) Consciousness studies quickly became a major player in cognitive research. At least a hundred new books and thousands of articles written from both an experimental and a philosophical point of view have now appeared. Interestingly, even though one of the things that immediately strikes almost everybody about consciousness is its unity, relatively little attention has been paid to it in this burgeoning literature. Neither philosophers nor experimentalists have had much to say about it.

Here we need to make a distinction. Under the name, the binding problem, one phenomenon related to the unity of consciousness has received a lot of attention – our ability (better, the ability of our visual cortex) to ‘bind’ diverse features of objects sensed by diverse parts of the visual or other sensible cortices into representations of three-dimensional objects. Binding of this sort is not unity of consciousness, not as I am discussed the latter. First, the representations that result from binding need not even be conscious. Many perfectly good representations of three dimensional objects affect behaviour and even enter memory without us ever becoming conscious of them. Second, the unity that I am exploring in this paper concerns multiple objects, related to one another in such a way that one is aware of many of them together, not individual objects by themselves. Contrary to the situation with binding, unified consciousness of multiple objects has received little attention.

2. Breaches of Unified Consciousness

This lack of attention to the unity of consciousness notwithstanding, some clinical and experimental phenomena in which this unity in fact plays a central role have received a lot of attention, especially situations in which there is some drastic change in unified consciousness.

There are at least two ways in which the unity of consciousness can be breached without unity being destroyed altogether. First, there are the “brain bisection” operations (commissurotomies) much beloved by philosophers, in which it appears that one “centre of consciousness” becomes two under certain conditions (Nagel 1971; Marks 1981). Since the two centres coexist and are both active at the same time, this breach of unity occurs at a single time.

Much ink has been spilled on the question of what is

going on in the phenomenology of these patients. Some theorists have even claimed that there is no whole number of 'centres of consciousness' in these subjects: there is too much unity to say that they are two, yet too much splitting to say that they are one. Some reason work by Sergent (1990) might seem to support this conclusion. She found, for example, that when a sign '6' was sent to one lobe and a sign '7' was sent to the other in these subjects (in such a way that no crossover could occur), they could say that 6 is a smaller number than 7 but could not say whether the signs were the same or different. However, the interpretation of these data is controversial. In particular, there does seem to be a clear answer to any precise 'one or two?' question we could ask, so it is not clear that Nagel's no whole number view receives any support from them. ('Unified consciousness of the two signs with respect to numerical size?' Yes. 'Unified consciousness of the visible structure of the signs?' No).

At any rate, since there continues to be unified consciousness, whether in what are unambiguously two centres or in something less well delineated, we do not have the complete destruction of unity here, though it is a breach of some kind. Then there is the more controversial phenomenon that used to be called Multiple Personality Disorder, now called, more neutrally, Dissociative Identity Disorder. In the most common variety, the units (whatever we want to call them: persons, personalities, sides of a single personality) "take turns" and when one is active, the other(s) usually are not. This is another breach in unity without unity being destroyed, in this case across time.

Then there are phenomenon in which unity does seem to be destroyed. In both brain bisection and dissociative identity cases, we have at most one unified consciousness splitting into two or more – two or more at a time or two or more across time. It is, of course, a matter of debate whether we have even that, especially in the case of dissociative identity disorder, but we clearly do not have more than that. In particular, unity itself does not disappear. The unity may split but it does not shatter. There are at least two kinds of case in which unity does appear to shatter.

One is a certain particularly severe variety of schizophrenia in which the victim seems to lose the ability to form an integrated, interrelated representation of his or her world and his or her self at all. The person speaks in "word salads" that never get anywhere, indeed that sometimes never even reach the level of complete sentences. The person is unable to put together integrated plans of actions even at the level necessary to obtain sustenance or escape irritants. And so on. Here, unity of consciousness appears simply to have shattered.

In schizophrenia of this sort, the shattering of unified consciousness is part of a general breakdown or deformation of mental functioning: affect, desire, belief, even memory all suffer massive distortion. In another kind of case, the normal

unity of consciousness is just as absent but there does not seem to be a general disturbance of the mind. This kind of case has been called dysexecutive syndrome (Dawson 1998, p. 215). What characterizes the breakdown in the unity of consciousness here is that subjects are unable to consider two things together, even things that are clearly related to one another. For example, such people cannot figure out whether a piece of a puzzle fits into a certain place even when the piece obviously fits. They cannot crack an egg into a hot pan. And so on. The reason seems to be that they cannot focus on two items simultaneously and so cannot fit the two together.

The ability to unify the contents of consciousness, as these last examples show, is central to all cognitive functioning, certainly functioning of any complexity. Moreover, the phenomenon once received a lot of attention. For example, it is the centrepiece of Kant's model of the mind (Brook 1994). These facts notwithstanding, the phenomenon has received, as I said, relatively little attention in recent work on consciousness.

3. Two Kinds of Consciousness

Before we can draw out the morals for the nature of unified consciousness contained in breaches of unity of the kinds we have just sketched, we first need to say a bit about consciousness in general. In particular, we need to make a crucial distinction.

Current work on consciousness labours under a huge and confusing terminology. Different theorists talk about access consciousness, phenomenal consciousness, self-consciousness, simple consciousness, creature consciousness, state consciousness, monitoring consciousness, awareness taken to be coextensive with consciousness, awareness distinguished from consciousness, higher order thought, higher order experience, qualia, the felt qualities of representations, consciousness as displaced perception, memes, virtual captives and on and on and on. A terminology this florid, confused and overlapping is a good sign that consciousness research is still very immature science. For purposes of this article, we need to make just one distinction: between what we will call simple consciousness, on the one hand, and consciousness of self, on the other.

Simple consciousness is closely related to sentience and to being awake. It is (perhaps among other things) being in a certain informationally and behaviourally responsive state to one's immediate environment. It is the ability, for example, to process and act responsively to information about food, friends, foes, and other items of relevance. One finds simple consciousness a long way down the evolutionary ladder.

Consciousness of self is the ability to process and respond in a similar fashion to oneself, more specifically, to one's own psychological states and to oneself as oneself, as the

thing whose states they are. The latter form of consciousness of self, the ability to identify oneself as oneself, probably requires the use of indexicals and may therefore be restricted to human beings and perhaps a few other species of primate.

The importance of this distinction between simple consciousness and consciousness of self is that the literature tends not to distinguish them and even to run them together. Everyday English does so, too. We speak of someone regaining consciousness – where we mean simple consciousness of the world. Yet we also say things like, “She wasn’t conscious of what motivated her to say that” – where we do not mean that she lacked simple consciousness of the world but rather that she was not conscious of something about herself. Some theorists make this distinction but others treat consciousness as either synonymous or at least coextensive with consciousness of the second sort, what we are calling consciousness of self. A few even occupy a middle ground, those philosophers who talk about the felt qualities of things as central to consciousness, for example. They do not seem to hold that we must be *conscious of* these felt qualities for them to exist as conscious states – but they do not view them as objects of simple consciousness of the world either.¹ To understand the unity of consciousness, we need to make the distinction. We need to treat consciousness of self and simple consciousness of the world as distinct. Why? Because even though the distinctive unity associated with consciousness is found in both, it takes somewhat different forms.

4. Unity of Consciousness

Indeed, we find unity of consciousness in at least three places. We might call them *unity of simple consciousness*, *unified consciousness of self*, and *unity of focus*.

Unity of consciousness in general starts from the intuitive idea laid out above that we are aware of a great many things at once. Here is a more informative definition:

The unity of consciousness =*df.* a consciousness of objects in which a number of representations of objects and sometimes also the representation themselves are combined in such a way that to be conscious of any of these objects and/or representations of them is also to be conscious of other objects and/or representations as connected to it/them and of the group together as a single complex whole of objects and/or representations.

i. Unity of simple consciousness Unity of simple consciousness is the consciousness that we have of the world around us (including, it should be noted, one’s own body and perhaps even psychological states) as a single world, of the various items in it as linked to other items in it. That is to say, it is simply unity of consciousness as found in the conscious representation of one’s environment.

ii. Unified consciousness of self Here one is aware of

oneself as not just the subject but, as Kant put it (A350), the “single common subject” of unified fields of representation (and the single common agent of unified activities of deliberation and action). Unified consciousness of self has been argued to have some very special properties, in particular that the reference to oneself as oneself that generates it is achieved without “identification” – that is to say, not via attribution of identifying properties or attributes to oneself (Castañeda 1966; Shoemaker 1968; Perry 1979) but we do not have room to go into that interesting issue here.

iii. Unity of focus Unity of focus refers to our ability to pay unified attention to objects and one’s own self. It may be part of unified consciousness in general. Whether it is or not, it is certainly not the same thing. In the two situations of unified consciousness just explored, consciousness ranges over many objects (or, in the case of unified consciousness of self, many occurrences of becoming aware of an object). Unity of focus is a matter of focussing on one such item. What I have in mind is Wundt’s old distinction between the field of consciousness (*Blickfeld*) and the focus of consciousness (*Blickpunkt*). The consciousness of an item on which one is focussing is just as unified as the consciousness of many such items at the same time. If so, we find an occurrence of unified consciousness *within* each of the two sites of unified consciousness laid out in (i) and (ii). We are talking, of course, about focal attention.

Note that, in addition to paying focal attention to individual objects, we can also unite a number of considerations in focal attention at the same time – desires, beliefs, alternatives, probabilities, and so on – and integrate them with, for example, available alternatives to reach decisions and choose courses of action. We can then go on to do the same with behaviour and resources, focussing on carrying out the choice in the face of obstacles, conflicting desires, and so forth. Moreover, there are costs attached to not having fully functioning focal attention, as the dysexecutive syndrome mentioned above makes painfully apparent. These remarks suggest that unified consciousness is not the only form of mental unity, a suggestion to which we will return briefly below.

Though this has often been overlooked, the unity found in unified consciousness comes in two very different forms, no matter which site we have in mind. The unity can consist entirely in phenomena occurring at the same time and it can consist in links of certain kinds among phenomena occurring at different times. In its synchronic form, it consists in such things as our ability to compare two items to one another, to see how two items fit or do not fit into one another, etc. Diachronically, it consists in the ability to retain a representation of an earlier object in the right way and for long enough to relate the earlier object to some currently represented object.

5. The Situations in which Unity is Breached

Let us now return to the four breaches of unified consciousness discussed earlier. We can see that in every case, at least one feature of unified consciousness as we defined it is absent.

In brain bisection cases, there are, notoriously, all sorts of situations in which a being in the body in question who is aware of some represented objects is not aware of others. Thus, for example, if the right hemisphere is asked to do arithmetic in a way that does not penetrate to the left hemisphere and the hands are shielded from the eyes, it is easy to set up a situation in which the left hand will be doing arithmetic while whatever controls the mouth insists that it is not doing arithmetic, indeed has not even thought of arithmetic today. And so on.

In DID cases, a central feature of the case is reciprocal amnesia (with all sorts of variations). Again, this is a situation in which a being aware of some represented objects is not aware of others.

The same pattern is even more clear in the cases of severe schizophrenia and dysexecutive disorder sketched. In both cases, awareness of some conscious states goes with lack of awareness of others. There is nothing aware of all the relevant conscious states together.

In short, our definition seems to illuminate the situations in which unity of consciousness is breached quite nicely.

6. Other Unities in Cognition

The unity of consciousness is far from being the only kind of mental unity as our remarks about what can be integrated in focal attention might indicate. There is unity in the early stages of cognition, unity that consists of integration of motivating factors, cognitive capacities, etc., and also unity in the outputs, unity that consists of integration of behaviour. First, the early stages of cognition.

One of the more striking things about human beings as cognitive systems is that we can bring an extremely wide range of factors to bear on a cognitive task, e.g., when we seek to characterize something or reach a decision about what to do about something. We can bring to bear: what we want; what we believe; our attitudes to self, situation, and context; input from each of our various senses; information about the situation, other people, others' beliefs, desires, attitudes, etc.; the resources of however many languages we have available to us; the various kinds of memory; bodily sensations; various problem-solving skills that we have acquired; and so on. Not only can we bring all these elements to bear, we can integrate them in a way that is highly structured and ingeniously appropriate to our goals and the situation(s) before us. This form of mental unity could appropriately be called *cognitive unity*.

At the other end of the cognitive process, we find an equally interesting form of unity, what we might call *unity of*

behaviour. To act, we need to coordinate our limbs, eyes, bodily attitude, etc., indeed in ways the precision and complexity of which would be difficult to exaggerate. Think of a concert pianist performing a complicated work.

And between the two is the unified consciousness laid out in the previous section.

7. The Unity of Consciousness as Evidence

It would seem that anything as central to human cognition as unified consciousness would have to play a role in any serious attempt to understand cognition. This, of course, has not been the case for a while. As has often been remarked, until about fifteen years ago, as cognition was modelled in cognitive science, it could just as well have been entirely nonconscious.

Historically, the unity of consciousness played a large role. Indeed, it is central to one of the most famous arguments in philosophy, Kant's "deduction" of the categories. In this argument, boiled down to its bare essentials, Kant argued that in order to tie various items together into a single unified conscious representation, we must be able to apply certain concepts to the items in question, in particular qualitative, quantitative, relational and what he called 'modal' concepts. (Modal concepts are the concepts we use when we decide whether something merely could exist, actually does exist, or [if this is ever the case] must exist.) By far the most important relational concept for Kant was the concept of cause and effect. Indeed, Kant thought that he could tease a complete defence of physics as a body of genuine knowledge out of the fact (as he saw it) that we have to be able to apply the concept of cause and effect to items in our experience if we are to have a unified consciousness of them.

It also played a role in arguments for dualism. Theorists otherwise as different as Descartes and Reid argued that unified consciousness could never be achieved by any system of components acting in concert. Give each of these components a part of a thought or perception divided up as finely as you please; the result will never be a unified thought or perception. As James famously put it,

Take a sentence of a dozen words, take twelve men, and to each one word. Then stand the men in a row or jam them in a bunch, and let each think of his word as intently as he will; nowhere will there be a consciousness of the whole sentence. [James, 1890, Vol. 1, p. 160]

The inference from this argument was that the human mind could not be any system of components. Now, anything material will be a system of components. If so, then the mind is not made out of matter.

Remarkably enough, some version of this argument impressed practically all theorists until well into the twentieth century, despite the complete absence of anything

like an alternative account and even though no less a figure than Kant poked a huge hole in it as early as 1781. (He noted that unified consciousness being achieved by a system of components acting together would be no more mysterious than it be achieved by something that has no parts or components.)

Nonetheless and whatever the merits of this argument for the simplicity and immateriality of the mind, the unity of consciousness did receive a lot of attention. And rightly so; cognition of any complexity must be unified in the way that consciousness is. Without the ability to retain representations of earlier objects and unite them with current represented objects, for example, the only language that we would be able to understand would be single words. The simplest of sentences is something spread over time. Now, unification *in consciousness* might not be the only way of achieving this unity but it is clearly a central way. If so, consciousness being unified is central to cognitive life as we know it.

In some circles, the idea that consciousness has a special kind of unity has fallen into disfavour lately. Davidson, Fodor, Dennett, Pylyshyn and the Churchlands come immediately to mind. The mind, they say, is modular (Fodor 1983) and most modules work out of the sight and control of consciousness. Moreover, we often do things that we don't intend, act for reasons of which we are not aware, and so on. Does any of this entail that consciousness is not unified? Not at all. The most these observations do is to shrink the range over which the unity extends. If something is out of the sight and/or the control of the conscious mind, we should ask: out of the sight or control of what? Unified consciousness. And we still need to understand the nature of this unity. Practically anything that could be said about the unity of consciousness when consciousness was conceived in the pre-twentieth century way as ranging over most everything mental can still be said about the unity of consciousness conceived in the twentieth-century way with a range that has shrunk dramatically.

Yet few recent philosophers and even fewer other cognitive researchers even raise the question of what the unity of consciousness is like. This is strange; it hardly seems controversial to say that we have unified consciousness, though how far this unity extends and over what can be debated. Indeed, without knowing what the unity of consciousness is, it is hard to see how we can even talk coherently about the situations so prominent at the moment where unity is absent or breached.

8. Background: Theories of Consciousness

We will close with a different question: Does the unity of consciousness have implications for the big debates about the general nature of consciousness currently raging? There are currently at least three camps. There are those who see consciousness as something quite unique, the “felt quality”

of representations or whatever. On this picture, representations could function much as they do even if, in Nagel's (1974) phrase, it was not like anything to have them. They would merely not be conscious. If such a split is possible, then the next question is whether consciousness plays any important cognitive role at all, its unity included. Maybe it is a free rider (Jackson 1986; Chalmers 1996).

Then there is a second camp. It holds, to the contrary, that consciousness is simply a special kind of representation: a representation of a representation, for example (Rosenthal 1991; Dretske 1995; Tye 1995).

Finally, there are those who hold that what we call consciousness is really something else. On this view, consciousness will in the end be “analysed away” – what we misleadingly label ‘consciousness’ is something very different from what we take consciousness to be like. Perhaps it is competing information-parcels in a Pandemonium architecture that have gained temporary dominance in the struggle for cognitive resources (Dennett 1991). Perhaps it is self-monitoring transformations of some sort in a multidimensional phase-space (Churchland 1995). Whatever, consciousness is not anything like the unified system of representations that both common sense and the Kantian model of the mind take it to be like.

No matter what one's view of the nature of consciousness, and the three views sketched above probably do not exhaust the possibilities, one will have to provide an account of the unity found in it. Indeed, even if one holds that this unity has been overrated and consciousness is much less unified than theorists have thought, one will still have to provide an account of this unity in those situations in which it does occur. The kind of integration of properties and objects into more complex objects of experience that we sketched above is too central to be ignored.

On the other hand, the unity of consciousness as we have defined it might not have much by way of implications for which of the three views is right. If it is as genuine and undeniable as I've urged, it may cut a bit against the third, eliminativist position. But adherents of this position have increasingly been treating consciousness as something real, i.e., nothing to be eliminated, in any case. The unity of consciousness seems neutral with respect to the other two positions. If so, curiously enough, which view of consciousness we start from may not matter much when we set out to understand the unity of consciousness.

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¹ A full set of relevant distinctions here would distinguish among consciousness of self, consciousness of one's psychological states, one's conscious states themselves, and so on. We do not need to go into the differences among these things here. For purposes of understanding the unity of consciousness, it is enough to distinguish between consciousness of self, on the one hand, and simple consciousness of the "world", on the other.