

A Conscious Event and Its Neural Correlate

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A conscious event, as for instance a sensation, as for instance a twinge of pain, appears in sense perception as a burst of neural impulses and hence is precisely that which so appears. Fundamentally, it is merely one of the indefinitely many things of indefinitely many different types which appear. It differs in that it has a special epistemological status, on account of which it gives rise to the infamous problem of consciousness. When a conscious event occurs, it is not the case that two events, a very peculiar one, the conscious event, and an ordinary physical one, the burst of neural impulses, its neural correlate, occur. Rather, just one event occurs, a natural event which appears in sense perception as a burst of neural impulses. But this is the key to the solution of the problem of consciousness.

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1. My position:

Let us begin with a point of comparison. A supernova is the explosion of a massive star. Suppose that a supernova occurs in another galaxy, millions of light years from Earth, and that a knowledgeable observer, one who knows what it is that he is observing, an astronomer, observes it with the aid of a telescope. He observes it, then, millions of years after it occurs. In this case, presumably, an event occurs, and in consequence, millions of years later, it appears to the observer as a supernova.

Now consider a second case. Suppose that a burst of neural impulses (of a certain type, a burst that constitutes the neural correlate of a conscious event) occurs in the brain of a normal human being, and that a knowledgeable observer, a neuroscientist, observes it with the aid of a sophisticated device. He observes it, then, a split second after it occurs. In this case,

presumably, an event occurs, and in consequence, a split second later, it appears to the observer as a burst of neural impulses.

There is of course a parallel here: In each case an event occurs and, as a result of perceptual processing, appears as such and such (a supernova in the former case, a burst of neural impulses in the latter). The point, then, is this: The event in the latter case, that which appears as a burst of neural impulses just as the event in the former case appears as a supernova, is a conscious event, as for instance a sensation.

To put it differently, just as an event of one type appears to a knowledgeable human observer as a supernova, an event of another type, a conscious event, appears to a knowledgeable human observer as a burst of neural impulses.

An event occurs, and appears as a supernova. I take the following position: Another event, a conscious event, as for instance a sensation, occurs, and appears as a burst of neural impulses. There is no ambiguity here. The term “occur” means just the same thing in these two cases, and the term “appear” means just the same thing. In each case, the perceptual process is simply a normal perceptual process. The parallel is perfect in every respect, although the two events are of course of widely different types, and differ utterly in epistemological status. This is quite simply true, and it is the key to the solution of the problem of consciousness.

To summarize in a nutshell, then, a conscious event appears as its neural correlate—that is to say, if it appears veridically to a knowledgeable human observer, one who knows that he is observing a burst of neural impulses. This is my basic thesis. If, then, X is the conscious event, then the neural correlate is X as X appears.

The event which appears as a supernova is of course something which appears, whereas the supernova is something—viz., the event just mentioned—as that something appears. Similarly, the event which appears as a burst of neural impulses—viz., the conscious event—is something which appears, whereas the burst of neural impulses is something—viz., the event just mentioned, the conscious event—as that something appears. It is of course quite correct to say that the supernova appears, but equally correct to say that something appears as the supernova. Similarly, it is quite correct to say that the burst of neural impulses appears, but equally correct to say that something appears as the burst of neural impulses. The crucial thing here, that which must not be lost, is the distinction between something which appears and something as that something appears. At times the question arises whether something is something which appears or rather something as that something appears. It is a legitimate question. The wording is perhaps unwieldy, but it makes up for this in accuracy.

2. Preliminaries:

In this section, I state some of my prejudices, offer the reader a few words of guidance, make a few points of terminology, and outline the remaining sections.

My prejudices are these: The philosophical problem of consciousness, in contrast with the neurophysiological problem of consciousness, is a riddle, and one solves a riddle in one fell swoop, with a single insight, not gradually by piecing together the varied insights and discoveries of many researchers. There is no reason to suppose that this particular riddle is unsolvable. If it has gone unsolved to date, that is because no one has yet been lucky enough to hit on the key insight. I believe, however, that my basic thesis, that a conscious event appears as its neural correlate, is the key insight.

The reader might do well to try to understand this paper on its own terms on first reading, as if he or she had never read the literature in the philosophy of mind, for I did not, in fact, arrive at my position through reflection on the literature.

I ask the reader to assume that I mean exactly what I write, down to the last comma: not one whit more, not one whit less, and nothing even slightly different.

I prefer the expression “conscious event” to “conscious state,” because I think it accurate to say that the ongoing consciousness of a human being consists of events far more than it consists of states. Where possible, however, I prefer to refer to a sensation rather than a conscious event, for ease of comprehension. A sensation, of course, is a conscious event of a certain type.

As I shall use the expression “appear,” to say that something appears is to say that it appears as a result of perceptual processing. There is no such thing, then, as an appearance in the absence of perceptual processing. Perceptual processing, however, entails a physical or chemical stimulus which impinges on one or more organs of sense: the eyes, ears, or skin, and so forth. Throughout this paper, the case of the event which appears as a supernova is the paradigm of appearance. It is only veridical appearance, then, that comes into question.

Section 3, the following section, describes the relation between my position on the one hand and the token-identity thesis on the other. My position entails but does not constitute a development or version of this thesis.

Section 4 takes up the question of the status of a conscious event. It attempts to explain that a conscious event has no special ontological status but does have a special epistemological status. Section 5 explains how it is that the special epistemological status of a conscious event gives rise to the problem of consciousness.

Section 6 explains how it is that the neural correlate of a conscious event and that conscious

event are numerically identical while yet they have different properties.

Section 7 offers three arguments for the thesis that a conscious event appears as its neural correlate. I think that the first of these arguments is conclusive, and that the three taken together are so *a fortiori*. They do not, however, by any means constitute the whole case for this thesis. It is, I think, obviously true, on reflection, that a conscious event appears as its neural correlate, and I think that the obvious truth and explanatory power of this thesis will sooner or later carry the day. In this paper, then, my primary purpose is simply to plant this thesis in the awareness of the philosophical community. The reader ought not to see arguments here where there are none. Although Section 7 presents arguments, the paper as a whole features exposition, not arguments intended to bludgeon the reader into affirmation.

Section 8 scotches two objections to the effect that a conscious event cannot appear in sense perception. The first runs as follows: It is nonsense to assert that a conscious event, as for instance a sensation, emits or reflects a physical or chemical stimulus. It follows, however, that a conscious event cannot figure in a perceptual process. But if it cannot figure in a perceptual process, then it cannot appear. The second objection is simpler.

Section 9 offers a definition of consciousness, and Section 10 attempts very briefly to answer the question of the extent and limits of “first-person authority” with respect to one’s own sensations. I take up this question to demonstrate the explanatory power of my basic thesis, simply as a case in point.

3. The relation between my position on the one hand and the token-identity thesis on the other:

The token-identity thesis states that the neural correlate of a conscious event is that conscious event. My basic thesis, in contrast, states that the neural correlate of a conscious event is that conscious event *as it, that conscious event, appears*. Thus my position entails the token-identity thesis.

The token-identity thesis, then, is correct as far as it goes, for it states that the neural correlate of a conscious event is that conscious event, and this is correct as far as it goes. It does not, however, go far enough, for it is necessary to add “as it appears” in order to make any sense of this assertion of identity.

My position is not in any way, however, a development of the token-identity thesis. Rather, it entails and hence, if sound, happens to verify it.

4. The status of a conscious event:

A conscious event is merely a natural event of a certain type, just as the event which appears as a supernova is a natural event of a certain type. It has no special ontological status.

On the other hand, conscious event—a twinge of pain, for instance—does have a special epistemological status, in that one can know that it occurs and what it is like simply in that it occurs. That is to say, one can know these things of it without using his eyes, ears, or other organs of sense. In contrast, one cannot know that the event which appears as a supernova occurs or what it is like simply in that it occurs, for one can know these things of it only by using his eyes. Thus you know your own twinge of pain as it occurs even if you don't know it as it appears in sense perception, whereas the astronomer knows the supernova only as it appears in sense perception.

How is it, then, that a conscious event has this special epistemological status? The answer to this is so obvious that it might be easy to miss. First consider the event which appears as a supernova. Quite obviously, it is not at all of the type that goes to make up the ongoing consciousness of a human being. In contrast, a conscious event which appears as a burst of neural impulses in a human brain is of course precisely of the type that goes to make up the ongoing consciousness of a human being. The latter event, the conscious event, has the special epistemological status it does simply because it is of this latter type.

In a nutshell, then, the event which appears as a supernova does not go to make up the ongoing consciousness of a human being whereas a twinge of pain, for instance, does, and thus the latter, the conscious event, differs from the former in that one can know that it occurs and what it is like simply in that it occurs, even though each of these events is simply a natural event which appears as such and such—a supernova, a burst of neural impulses—to a knowledgeable human observer.

Imagine this: A painter is painting a scene in oils. You can see his canvas and his palette, but, for whatever reason, not the scene itself. You can know what the scene is like, then, only insofar as he applies various pigments to his canvas in a pattern that serves to represent the scene. In contrast, you can know what his pigments themselves are like by looking at them on the palette, whether or not he applies them to the canvas in a pattern that serves to represent the scene. The epistemological status of the pigments, then, is special. A representation is requisite if you are to know what the scene is like, but no representation is requisite for you to know what the pigments themselves are like. The status of the pigments is special in this way, however, simply in that they, these particular pigments, constitute the medium of representation in this case.

But this illustrates a general point: In any case, the medium of representation has a special epistemological status.

This, however, suffices to explain the special epistemological status of conscious events, and hence suffices to explain the special status of conscious events simpliciter: A process of perception, which involves a physical stimulus that impinges on the organs of sense, is requisite if you are to know what a supernova is like, but no process of perception is requisite for you to know what a conscious event is like, simply in that conscious events are the medium, as it were, they very stuff, of consciousness, and hence of appearance.

When a sensation occurs, the subject, if he possesses and applies sufficient powers of reflection, knows that it occurs and what it is like, in sensory terms, even though it doesn't appear to him. He knows that the sky is blue—to take an example in which something, the sky, does appear—only in that a sensation of blue occurs under certain conditions, viz., when he goes outdoors and looks up, but he knows that that sensation of blue, or one qualitatively identical to it, occurs and what it is like simply in that it occurs. If he didn't know in sensory terms what the sensation is like simply in that it occurs, then—this bears stressing—he wouldn't know in sensory terms what the sky is like in that the sensation occurs when he goes outdoors and looks up, which is to say that he wouldn't know in sensory terms, as of course he does know, what the sky is like, period. This is elementary. To assume that a person knows in sensory terms what something X is like only if and in that X appears to him is to commit an elementary error. It just isn't true. Sensations are the exception.

5. How it is that the special epistemological status of a conscious event gives rise to the problem of consciousness:

A conscious event gives rise, of course, to a problem, the problem of consciousness, whereas the event which appears as a supernova gives rise to no parallel problem. This is because, on account of the epistemological difference just indicated, one falls easily to the impression that in the former case we have two things, a very peculiar thing, the conscious event, and an ordinary physical thing, a burst of neural impulses, its neural correlate, whereas in the latter case we have only one thing, an ordinary physical thing, the supernova. This impression is mistaken, but due to it, there appears to be a special problem in the former case, a problem that has no parallel in the latter—viz., the problem what sort of thing the conscious event is and how it relates to the physical world, and in particular to its neural correlate.

In fact the two cases are, to repeat, parallel in every respect, and thus there is no special problem in the former case, that of the conscious event. In the latter case, we have just one thing, an

event which appears as a supernova, and in the former case, likewise, we have just one thing, a conscious event, which appears as a burst of neural impulses. On the other hand, two events figure in the latter case: the event which appears as a supernova, and, for lack of a better expression, the event in which it appears as such, which is of course a conscious event. The first event occurs millions of years before the second and thus is numerically diverse from it. But two events figure in the former case, too: the event which appears as a burst of neural impulses, the conscious event, and the event in which it appears as such, which is also a conscious event. The first event occurs a split second before the second and thus is of course numerically diverse from it.

In the former case, then, we do not in fact have one peculiar thing and one ordinary physical thing, but rather a natural event which appears as a burst of neural impulses, just as, in the latter case, we have a natural event which appears as a supernova. It is the special epistemological status of the conscious event, which is of course genuine, that gives rise to the illusion that we have peculiar thing in addition to an ordinary physical thing in the former case, and thus gives rise to the philosophical problem of consciousness. To expose this illusion, then, is to eliminate this problem.

6. How it is that the neural correlate of a conscious event and that conscious event are numerically identical while yet they have different properties:

The token-identity thesis states, again, that the neural correlate of a conscious event is that conscious event. But this invites an objection: The neural correlate on the one hand and the conscious event on the other are very different indeed. They have different properties. How, then, can it be that they are one and the same thing?

Now quite in general, if X appears as Y—that is, veridically, in the way in which the event which appears as a supernova appears as such—then Y is X as X appears, and hence $Y=X$. Hence my basic thesis, that a conscious event appears as its neural correlate, entails that the neural correlate is one and the same thing as the conscious event—i.e., once again, it entails the token-identity thesis. It escapes the objection just stated, however, for if the neural correlate is the conscious event *as the latter appears*, then there is no reason to conclude that the two must be alike, no reason to conclude that they must have the same properties.

But this calls for elaboration. Precisely how is it that the neural correlate and the conscious event are numerically identical while yet they have different properties? Take a sensation, for instance. Let's say that the neuroscientist observes its neural correlate, which is of course a burst of neural impulses. This burst appears, then, from his point of view. His subject, on the other hand, does not observe this burst, it does not appear to him in sense perception, but it does occur

from his standpoint. It occurs as a sensation, for that is what it is. Only one event, then, occurs. It is a burst of neural impulses from the point of view of the neuroscientist and a sensation from the standpoint of the subject, but these are one and the same event. Hence it is that $Y=X$.

On the other hand, the event in which the subject's sensation appears as a burst of neural impulses is, to repeat, a second event, numerically distinct from the sensation. This second event, however, is not merely numerically distinct from the sensation. It is qualitatively distinct, too: it has different properties. Let the first event, the sensation, be an odor, for instance. Then it appears as a burst of neural impulses which centers on the olfactory area of the subject's brain. In contrast, the second event, that in which the first, the sensation, appears, itself appears, if it does appear, as a burst of neural impulses which centers on the visual area of the neuroscientist's brain. But since one can know what a sensation is like quite apart from the way it appears, it is possible to contrast the first and second events in another, more illuminating way: The first event, the sensation, is an odor, viz., the odor the subject is in a position to report, while the second event, that in which the sensation appears as a burst of neural impulses, is a sight, viz., the sight the neuroscientist is in a position to report. But this brings us to the crucial point: It is the nature of the second event which determines the nature of the first event, the sensation, as it appears, which is to say the nature of the neural correlate. The second event is the sight of a burst of neural impulses which centers on the olfactory area of the subject's brain. Thus the sensation as it appears, the neural correlate, is a burst of neural impulses which centers on the olfactory area of the subject's brain. The sensation, then, is what it is in that the first event is what it is, for the sensation is the first event, but the sensation as it appears, the neural correlate, is what it is in that the second event, that in which the sensation appears, is what it is. But the first event and the second are very different. Hence it is that X is very different from Y .

The upshot, then, is that $Y=X$ but X is very different from Y .

What, then, of Leibniz's law—that if $A=B$, then of necessity A and B have precisely the same properties? It holds within the domain of things as they appear, and it holds within the domain of things which appear and thus among conscious events. It does not, however, hold “across the boundary” between these two domains, for if X appears as Y , then $Y=X$, but it is to be expected that for the most part, at any rate, X and Y have different properties, as just explained.

7. Three arguments for the thesis that a conscious event appears as its neural correlate:

There follow three arguments for my basic thesis. The first is, I think, conclusive. It pro-

ceeds from the fact that the neural correlate is something as that something appears, and asks “What is that something?”

The neuroscientist literally sees the burst of neural impulses that is the neural correlate of the conscious event, as for instance the sensation, his subject experiences, though he must employ a sophisticated device to do so. But it follows that the neural correlate—unlike the sensation itself—is something as that something appears. What, then, is that something which appears as the burst of neural impulses the neuroscientist sees? There are two possibilities: it is the sensation, or it is something else. But the choice here is easy indeed. The sensation correlates perfectly with the burst of neural impulses. It correlates just as one would expect if the burst is the sensation as the sensation appears. To begin with, the temporal relations are just as one would expect. Moreover, if a qualitatively identical sensation occurs on another occasion, then a qualitatively identical burst occurs, and if a qualitatively identical burst occurs on another occasion, then a qualitatively identical sensation occurs. Moreover, the sensation and the burst run parallel in various ways. Thus, perhaps—just to explain what this means—if and when the sensation becomes more intense in phenomenal terms, the burst becomes more intense in physical terms.

In sum, then, there is no room for serious doubt: It is the sensation, not something else, which appears as the neural correlate.

The second argument urges, in two steps, that a sensation appears if a knowledgeable observer looks for it in the right place at the right time, and asks “As what?”

Clearly, a sensation—a twinge of pain, for instance—is not something as that something appears, for it is not through a process of perception that the subject knows that the sensation occurs and what it is like; for contrast, a supernova is something as that something appears, for it is through a process of perception that an observer knows that the supernova occurs and what it is like. The sensation, however, is an event that occurs naturally, and thus it is to be assumed that it appears. Why shouldn’t it appear? Is it hidden from human observation? But why should it be hidden? In what way is it hidden? To speak of a sensation is not, after all, to speak of an event that occurs inside a black hole billions of light years from Earth, but rather of an event, a very commonplace one, that pertains to a human being who sits right here. In recent centuries, moreover, and particularly in recent years, sophisticated technology has been developed to render objects and events previously impossible to observe observable—including technology that renders bursts of neural impulses in the brain observable. A sensation, though it has a special status, is not hidden.

If, however, a sensation appears, it appears, of course, as something which is something—

viz., the sensation—as that something appears. What, then, is this something which is something as that something appears? It is not the sensation itself, for the sensation itself is not, to repeat, something as that something appears. There is only one possibility as to the identity of this something, for there is only one thing which is something as that something appears and correlates with the sensation in the ways one would expect, and this is not, for instance, a burst of lightning on Jupiter, and dust storm on Mars, or a current in the Pacific Ocean, but rather a certain burst of neural impulses in the brain of the subject, the neural correlate, as it is called. Hence the neural correlate is the sensation as the sensation appears.

There is something, then, the neural correlate, which makes a perfect candidate for the role “that as which the sensation appears.” But this makes it difficult to deny that the sensation appears.

To summarize this second argument, then, a sensation appears, but given that it does, there is no choice but to conclude that it appears as a certain burst of neural impulses, its neural correlate.

The third argument proceeds from an obvious fact, the fact that some relation or other obtains between a sensation and its neural correlate, and asks “What is this relation?”

There are three possibilities: it is the relation “appears as,” as exemplified by the case of the event which appears as a supernova; or it is simply the relation “is one and the same thing as,” the relation of numerical identity; or it is some other relation.

As for the thesis that the relation between a sensation and its neural correlate is the relation “appears as,” there is no plausible objection to it, for these two terms, once again, are correlated just as one would expect if in fact the former appears as the latter, and this in itself more or less clinches the case. As for the thesis that the relation is simply that of numerical identity, it is indeed attractive, for it explains some aspects of the correlation between the two terms. It fails, however, in that it fails to explain how it can be that the sensation and the burst of neural impulses are numerically identical while yet they are so very different, have such very different properties. And as for the thesis that the relation is some other one, this is scarcely worthy of comment, for there is no plausible answer to the question “What other one?” The relation “is coordinated with” springs to mind, for the sensation is indeed coordinated with its neural correlate. This fact, however, does not answer the question as to the relation: rather, it gives rise to it.

To summarize this third argument, then, the relation which obtains between a sensation and its neural correlate is the relation “appears as,” not some other one.

8. Two objections to the effect that a conscious event cannot appear in sense perception:

The first objection runs, to repeat, as follows: It is nonsense to assert that a conscious event, as for instance a sensation, emits or reflects a physical or chemical stimulus. It follows, however, that a conscious event cannot figure in a perceptual process. But if it cannot figure in a perceptual process, then it cannot appear.

This objection fails. It is indeed nonsense, nevertheless, to assert that a conscious event emits or reflects a physical or chemical stimulus. But just why is it nonsense?

As such, a sensation is not something as that something appears in sense perception, but rather something which appears. Hence it does not pertain to the domain of things as they appear in sense perception. But the domain of things as they appear in sense perception, in the way the event which appears as a supernova appears as such, is what we call the physical world. As such, then, a sensation does not pertain to the physical world. There are, however, certain predicates which apply only to objects or events which pertain to the physical world. One of these is the predicate "...emits or reflects a physical or chemical stimulus." This predicate, then, does not apply to a sensation. To put it differently, it makes no sense to say, for instance, that a phenomenal sound or odor emits or reflects electromagnetic radiation, for the predicate "...emits or reflects electromagnetic radiation" applies to something as that something appears, whereas a phenomenal sound or odor is not something as that something appears, but rather something which appears.

It is the supernova, then, not the event which appears as a supernova, which emits electromagnetic radiation that impinges on the retinae of the astronomer, and the neural correlate of the sensation (or a physical phenomenon associated with it), not the sensation, which emits electromagnetic radiation that impinges on the retinae of the neuroscientist—or more accurately, that determines what pattern of electromagnetic radiation impinges on his retinae.

To return to the objection, it fails because, although it is nonsense to assert that a conscious event emits or reflects a physical or chemical stimulus, it doesn't follow that it cannot figure in a perceptual process. It can figure, for it can figure as a physical event, its neural correlate. But to say that it figures as its neural correlate is to say that it figures, for it is (=) its neural correlate.

If the subject has a sensation, he knows what it is like and hence can say many things about it. It is far from easy, however, to determine what one can say about its analog, the event which appears as a supernova, for this event, of course, does not constitute a sensation, and more broadly does not constitute a conscious event (not for a human being, at any rate). Perhaps, in a sense,

it is too much to describe it as an event, or too much even to refer to it as “it”. Perhaps all one can say is this: The event which appears as a supernova is as it appears—assuming that the appearance is veridical, i.e., that the perceptual process includes no glitches. That is, perhaps one can describe that event only in terms, the term “event,” for instance, which describe it as it appears—that is, to a knowledgeable human being. But this poses no problem. It means only that a human being can but describe that event as it appears to a human being.

Now let us consider the process whereby the neuroscientist perceives a sensation as a burst of neural impulses. This very process, just like the supernova or the neural correlate of the sensation, is something as that something appears. Thus, just as an event occurs and appears as a supernova, and one can describe it as an event, borrowing a term which applies to the supernova, its veridical appearance, so a process occurs and appears as the perceptual process in question, and one can describe it as a process, borrowing a term which applies to the perceptual process, its veridical appearance. To describe this process, then, is to describe it as it appears. To describe it as it appears, however, is to describe it as a physical process. Hence the sensation figures in the perceptual process as a physical event, and specifically as a burst of neural impulses in the subject’s brain. Likewise, the conscious event at the other end of the process, the sight of a burst of neural impulses in the subject’s brain, also figures in the perceptual process as a burst of neural impulses, a burst in the neuroscientist’s brain.

If, then, one demands to know how the sensation as such—not the neural correlate but the sensation—figures in the perceptual process, there is no answer, and thus there might appear to be a gap in the process. That is, the sensation might appear to be unconnected with the process, since it cannot be said to emit or reflect electromagnetic radiation or any other physical or chemical stimulus. The demand to know how the sensation as such figures in the perceptual process, however, is illegitimate, for, as just explained, to describe the perceptual process is to describe it as it appears, and this is to describe it as a physical process in which the sensation figures as a burst of neural impulses, not as a sensation.

The second objection runs as follows: Conscious events are the very medium of consciousness, as opposed to the kind of thing that can appear. They cannot, then, appear.

The rejoinder, however, is obvious: Conscious events are both the medium of consciousness and one kind of thing that can appear, and sensations, in particular, are both the medium of appearances and one kind of thing that can appear. Indeed, it is precisely this fact that gives rise to the philosophical problem of consciousness in the first place.

9. A definition of consciousness:

What, then, is the consciousness of a human being? There are two ways to put the answer. The first way is this: The consciousness of a human being is a series of bursts of neural impulses. This is accurate, just as it is accurate to say, in the analogous case, that the event in question is a supernova. The statement that consciousness is a series of bursts of neural impulses, however, is opaque, for it leaves the subject's standpoint out of account and gives no hint how to deal with the fact that consciousness on the one hand and the series of bursts of neural impulses on the other are so very different.

The second way to put the answer is this: The consciousness of a human being is a series of events which appears as a series of bursts of neural impulses. This too is accurate, just as it is accurate to say, in the analogous case, that the event in question is an event which appears as a supernova. The statement that consciousness is a series of events which appears as a series of bursts of neural impulses is, I think, comparatively transparent, for it does take the subject's standpoint into account, in that it is from this standpoint that the first-mentioned series of events—a series of sensations, perceptions, thoughts, conscious intentions, and so on—occurs, and does give a hint how to deal with the fact that consciousness on the one hand and the series of bursts of neural impulses on the other are so different: the former appears as the latter.

The consciousness of a human being, then, is a series of events which appears to any knowledgeable human observer, if it appears veridically, as a series of bursts of neural impulses of a certain class or type in his or her brain.

10. The extent and limits of "first-person authority" with respect to one's own sensations:

The account I have outlined suggests answers to many questions in the philosophy of mind. I shall give just one example here, in the briefest terms.

One knows what his own sensations are like not in that he perceives them—for of course he doesn't perceive them, doesn't know about them through his eyes, ears, skin, or other organs of sense—but simply in that they occur from his standpoint. But since perception does not figure in the case, there is no chance of misperception. That is to say, there is no chance that a glitch will occur in the process of perception, for there is no process of perception. To the extent that there is such a thing as "first-person authority" with respect to one's own sensations, then, it lies precisely in the fact that there is no chance of misperception.

On the other hand, "first-person authority" with respect to one's own sensations is indeed

limited, and its limitations lie in the fact that even though there is no chance of misperception, there remains ample scope for miscognition, plenty of chance to commit errors in thinking about one's own sensations.

11. Summary:

A conscious event is not something as that something appears in sense perception. Hence it is not a physical event. It is, rather, something which appears in sense perception—when it does appear—as something. To be specific, it appears as a burst of neural impulses in the subject's brain. It has a special epistemological status because it goes to make up the ongoing consciousness of the subject. Because it goes to make up his ongoing consciousness, he knows it as a conscious event. On the other hand, the neuroscientist knows it, the conscious event in question, in the way an astronomer knows a supernova—viz., as it appears. It occurs, then, from the standpoint of the subject, as a conscious event, and appears from the point of view of the neuroscientist as a burst of neural impulses. This circumstance, however, gives rise to the illusion that two things occur: a peculiar thing, the conscious event, and an ordinary physical thing, the burst of neural impulses. Thus arises the philosophical problem of consciousness. In fact, however, only one thing occurs: a natural event which appears as a burst of neural impulses. But though the burst of neural impulses and the conscious event are numerically identical, they have different properties in that the burst is not the conscious event simpliciter, but rather the conscious event, the event which appears, as it appears as a result of perceptual processing. If the event in question were processed quite differently by an intelligent nonhuman being, then, presumably, it would appear, to him, quite differently, as something quite other than a burst of neural impulses.

The bottom line, then, is this: A conscious event appears in sense perception as a burst of neural impulses, its neural correlate, and hence is precisely that which so appears.

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