Phenomenal and noumenal consciousness, state vectors, and the personal identity problem

ABSTRACT: *The phenomenon of our experience is the property we identify as consciousness, which is why a reductive explanation of phenomenal experience would seem to explain consciousness - Indeed, Chalmers (1995) has described the 'hard problem of consciousness' as the problem of experience. However, the specificity of our conscious identity as distinct from conscious experience in general, tells us that following a reductive explanation of phenomenal experience, questions must remain regarding personal identity and as to why each of us happen to be the individual we are, rather than anyone else. In this paper, I explore the mystery of consciousness as distinct from the problem of phenomenal experience.*

1. Of phenomenal experience and its reductive explanation

Phenomenal experience is the term used to describe the rather subjective 'something it is like' aspect of experience (Jackson, 1974). Examples of phenomenal experience include what it is to experience depths and shades of colours, the variety in the subtlety of aromas, the character of sound clusters, or the pleasantness of tactile sensations. Whilst being a fundamental aspect of the way we relate to the environment, the phenomenon of our subjective experience has ineffable qualities that evade objective analysis. Phenomenal experience is the experience that individuals identify as the subjective experience of consciousness.

2. The Phenomenon of Experience and the Phenomenon of Consciousness

Hierarchical Systems Theory claims to be a reductive explanation of phenomenal experience that uses principles in systems dynamics to illustrate and describe an evolving emergent system's hierarchy. This dynamic hierarchy explains the behavioural and physiological characteristics, and evolutionary dynamic of creatures that possess phenomenal experience.
Evidently, asserting the validity of a reductive explanation of phenomenal experience, conflicts with Chalmers (2003 – Consciousness and its Place in Nature) assessment that the hard problem of consciousness is the problem of experience. Chalmers states that a solution to the problem of experience will involve an account of the relation between physical processes and consciousness.

In saying this he is indicating that rather than insisting on a clear distinction between phenomenal experience and consciousness, Chalmers is insisting on a clear distinction between the materialist/dualist approaches to them both. This is evident from Chalmers (2003) identification of six classes to categorize "the most important views on the metaphysics of consciousness": Of the six classes, three are reductive; which see consciousness as a physical process that requires no expansion of a physical ontology:

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1) Type A materialism – There is no epistemic gap between physical and phenomenal truths; or at least, any apparent epistemic gap is easily closed (Dretske, Dennett, Harman, Lewis, Rey, and Ryle);
2) Type B materialism – There is an epistemic gap between the physical and phenomenal domains, but there is no ontological gap (Block, Carruthers, Hill, Levine, Loar, Lycan, Papineau, Perry, and Stalnaker); and
3) Type C materialism – There is a deep epistemic gap between the physical and phenomenal domains, but it is closable in principle (whose sympathisers are Churchland, McGinn, and Nagel).

Three of the six classes are non-reductive; where consciousness involves something irreducible in nature and requires expansion or reconception of a physical ontology:

4) Type D dualism or interactionism – Phenomenal properties play a causal role in affecting the physical world such that physical states cause phenomenal states, and phenomenal states cause physical states. (Eccles, Foster, Hodgson, Popper, Sellars, Stapp, and Swinburne);
5) Type E dualism or epiphenomenalism – Phenomenal properties are ontologically distinct from physical properties. Phenomenal properties have no effect on the physical. (Campbell, Huxley, Jackson, and Robinson); and
6) Type F monism - Consciousness is constituted by the intrinsic properties of fundamental physical entities (Chalmers, Feigl, Griffin, Lockwood, Maxwell, Russell, Strawson, and Stoljar).

With Chalmers' stance one could conclude that a reductive explanation of phenomenal experience is by necessity also a reductive explanation of consciousness - Experience is the property we identify as consciousness; therefore, the phenomenon of experience is consciousness. However, why should one presume that a reductive explanation of phenomenal experience is not distinct from the materialist or dualist arguments regarding consciousness?

Chalmers' categorization highlights above all else, an absence of consensus regarding the relationship between, and relevance of, phenomenal experience, consciousness, and physics. Crucially, Chalmers appears to have highlighted an absence of clarity by stating that the "constraints [for closing an epistemic gap] are grounded in the nature [italics added] of physical concepts and in the nature of the concept [italics added] of consciousness." (p. 23) I suggest therefore, that the nature of the concept of the 'hard problem of consciousness' does not entail providing a reductive explanation of phenomenal experience.

3. On the nature of the mystery of consciousness

A reductive explanation of phenomenal experience demonstrates how there could be a phenomenal experience that identifies itself as a conscious individual. In this manner, there is a claim of logical supervenience where a

physical description of the structure and dynamics of our world explains the existence of individuals that possess phenomenal experiences. Such understanding explains how phenomenal experience is personal and unique to each individual and explains that an individual with phenomenal concepts has a unique concept of self, thereby ensuring the existence of the first person perspective.

However, such an explanation will not explain why a particular consciousness identifies itself, as itself, rather than any other one of several billion other human phenomenal experiences of the past, present, or future. Following a reductive explanation of phenomenal experience, the question remains open to each individual: 'Why is my consciousness determined as 'me', rather than anyone else?'

When a human looks in the mirror and sees its face as its own image, what is the nature of that revelatory or material observation? Clearly, one might argue that given a reductive explanation of phenomenal experience there is an explanation as to how and why individuals evolve and exist in the universe such that they look in mirrors and say to themselves; I am me and I recognize that I am a sentient being. However, whilst one may argue and even explain that sentient beings are an emergent feature of the natural world, such a world does not explain why it should indulge 'me' as an existing entity in part of it, 13.7 billion years from the start of the universe on Earth in the year 2008.

Following a reductive explanation of phenomenal experience, the central mystery of consciousness is no longer how and why do physical processes give rise to humans that possess phenomenal experience. The mystery, is what materially or otherwise makes ones own particular phenomenal experiences ones own, as opposed to someone else's?

If one assumes validity in the claim that Hierarchical Systems Theory provides a reductive explanation of phenomenal experience, how should we address this revamped central mystery of consciousness. In this regard, one's specific consciousness would not be a function of one's phenomenal experience, but determined materially, or otherwise, in a manner that is distinct from experiential detail and content. Assuming this is the case, what then is the nature of that difference between that which makes 'your' particular phenomenal experiences yours, as opposed, for example, to mine?

4. What is consciousness outside of phenomenal experience and phenomenal conceptualization?

As a 'thing-in-itself' or "thing as-such" (das Ding an sich – Kant, 1781/8 – Critique of Pure Reason) one would consider consciousness in terms of an entity whose empirical object is transcendentally separate from all the conditions under which a subject can gain knowledge of it. Conceived in this manner, consciousness as a thing as-such, is unknowable. To date, science has been unable to say anything of the intrinsic material nature of all known physical entities-'as-such' (Russell, 1927 – The Analysis of Matter) and similarly, we can know of consciousness only by virtue of its relation to other physical dynamics.

Consequently, if we cannot examine the thing as-such – that is, consciousness as an empirical material entity – but wish to understand consciousness beyond phenomenal experience, what other conceptual framework is open to us? In answer to this question, my proposal is to explore, not the phenomenon of conscious experience (the phenomenon being impossible to analyse directly using experimental tools), nor the thing as-such (which, like all physical entities, will always remain intrinsically unknowable), but rather the noumenon of consciousness – a thing denoted in a manner that is not knowable through the phenomenon of experience or by the senses.

Kant's perspective from that of classical physics confines his description of noumenon as "a thing so far as it is not an object of our sensible intuition, and so abstract from our mode of intuiting it" (trans. 1929, A250/ B307). My view is that Kant would not have written of 'noumenon' in the same manner had he known of the physical world as it is known today. Do some applications of quantum mechanics or general relativity better define the essence of Kant's 'abstract intuition' regarding physical reality?

There are four know fundamental forces in nature: Gravity, electromagnetism, weak nuclear, and strong nuclear forces. Consider this scenario: Before you came into existence as a sentient being, you were unobservable because you had no mass, no charge, and no gravity and therefore no physical means to exist. Undoubtedly, there came a point when you did become observable. I am not talking about the point when other people saw you as a physical body – There is nothing distinctive about such an observation other than that other people are observing just an organized body of matter. Rather, I am talking about the point when you observed yourself and recognized that you existed as a sentient being. This was the point when you recognized that you were an individual with phenomenal experience and a unique feature of existence if only for the fact that there was only one of you. What is the fundamental nature of that observation? It must be physical for it to be observably measured in this manner. Animals observably measure their environment through their senses, but only humans have a measure of themselves beyond self recognition.

A physicalist reductive explanation of consciousness is distinct from a physicalist reductive explanation of phenomenal experience. An explanation of consciousness requires identifying not just the unique first person phenomenal perspective, but the distinct personal consciousness of every viable individual consciousness. The explanation would have to explain, unlikely as it may seem, you and me, rather than merely explain how and why phenomenal experience is merely an emergent consequence of physical dynamics. When a human looks in a mirror and sees its face, it sees a material incarnation of an exceptional event that has never before occurred in the history of the universe. What elements of nature or physics determine one's own specific frame of reference? What are the material points of reference or measurement, for 'the self'?

5. A physicalist exploration of the noumenon of consciousness

There are quantum mechanical models (e.g. Penrose & Hameroff, 1996 – Conscious events as orchestrated space-time selections; Beck & Eccles, 1992 – Quantum aspects of brain activity and the role of consciousness; Eccles, 1994 – How the Self Controls its Brain; Lockwood, 1989 – Mind, Brain and the Quantum: The

Compound 'I'; Stapp, 1993 – Mind, Matter, and Quantum Mechanics, 1995 – Why classical mechanics cannot naturally accommodate consciousness but quantum mechanics can) which, their proponents argue, could provide an explanation of consciousness. However, even if one were to demonstrate a functional role for quantum dynamics in the operation of neural activity which seems doubtful (Stenger, 2009 – Quantum Gods. Creation, Chaos, and the Search for Cosmic Consciousness) it is unclear from these models, how this would demonstrate the reducibility of consciousness to a quantum mechanical brain state (Bourget, 2004 – http://philrsss.anu.edu.au/people-defaults/dbourget/QLPM.pdf).

However, Page (2002, from p. 5, para. 4 – Mindless sensationalism: a quantum framework for consciousness) assumes a psychophysical parallelism. In his model, there is on the one hand, the classical world-view and on the other, the conscious world view. The classical world view is the one that each of us interprets from our first person experiences, just as we develop a sense of the world-view explained by classical physics. However, the conscious world is one that describes all possible conscious experiences as a single quantum state (p. 10).

Page's approach to the psychophysical parallelism of the classical and quantum views of consciousness can be interpreted through Ogborn & Taylor's (2005 – Quantum physics explains Newton's laws of motion) illustration of how the often perceived, peculiar and mysterious yet fundamental quantum laws, explain Newton's classical laws of motion:

Fermat's principle of geometric optics states that between source and reception, light travels along a path that takes the shortest time. This principle presents the dilemma as to how light can possibly know in advance what the quickest path is from source to receptor. Three hundred years after Fermat, Feynman (1985 – QED: The Strange Story of Light and Matter) utilized quantum mechanics to formulate the answer to this paradoxical problem with the answer that 'light explores all possible paths'. However, this answer raises questions, such as what does it mean, 'to explore all possible paths'? With his answer, Feynman describes how the behaviour of a photon is determined by a total resultant quantum amplitude that generates the probability of a behavioural event. Quantum mechanics demonstrates that the most probable path of the event always is the one that takes the shortest time. With ever increasing masses, the probability increases to a degree that displaces quantum effects and heightens the reliability of classical behaviours.

How might this principle apply to the mysterious phenomenon of consciousness?

6. The State Vector (Wave function) Interpretation of consciousness

6.1 State Vector Consciousness version 1 - narrow context

In what way can I relate to my experiences of 28th November last year? I have no memory of what I did nor remember the nature of my phenomenal experiences on that particular day. My existence appears to me to have been circumstantial. All I can be sure of is that I probably existed. The past experiences that colour my consciousness in the present, are a conflation of my memories, which are determined by their 'weighted'

values. These weighted values generate the amplitude by which I make the inference that I probably existed as a conscious being. The context of all my relationships to all past experience is determined in this manner in every unit of time that I seek to conceive of them. This is the context of my present, a context that is determined by the confluence of all these states. These states are the state vector for my consciousness in all its known and unknown elements.

From Page's (2002) model, one can propose that following the inception of its phenomenal experience, a human brain is compelled to explore all viable consciousness paths. Consequently, if all viable consciousnesses are assigned a certain weight, this means that some part of an individual's consciousness is, just like the path of a photon to some improbable degree, every possible consciousness. However, the actual total resultant amplitude determines only one specific consciousness. The specificity of this resultant consciousness is a temporal illusion. For a photon, the probable path happens to be the quickest route from source and receptor. In the case of consciousness, an individual's specific consciousness is the probabilistic outcome of the exploration of all possible consciousness paths.

Unfortunately, as is the case with a reductive explanation of phenomenal experience, interpreting consciousness in this manner does not identify the cause for the individual "me" as distinct from all other individuals that I might otherwise be or have been. If the application of state vectors as a solution to the problem of consciousness as suggested above had validity, it would apply to all individuals indistinguishably, excepting that the content of each individual's values differ because their experiences differ.

In this model, quantum mechanics formulates a bridge between the phenomenon of experience and all possible consciousnesses which are; the noumenon of consciousness. Interestingly, one's decisions affect one's phenomenal experiences, which in turn influence the 'resultant amplitude' that determines the course of one's consciousness. From this viewpoint, one can appreciate that the individual choices determine the weighted 'path' of our consciousness and also those other individuals' paths in whom we have contact. In other words, our decisions impact on the evolution of consciousnesses.

6.2 State Vector Consciousness version 2- wide context

When originally considering state vector consciousness version 2, I concluded that there are difficulties in determining "my" specific state vector: The difficulties lie in the fact that there are no comparative values, no frames of reference, no forms of measurement that distinguish individual consciousnesses in this context. And yet without any known frame of reference, I am able to say; I am me and not anyone else.

However, it is notable that equally, without any objective frame of reference, Hartle & Hawking (1983 – Wave function of the universe) propose the "No Boundary" model of the origin of the universe. In the Hartle-Hawking model of the natural origin of our universe, and out of the limitless past in the time before our big bang, the prior universe deflates to the point where it becomes unphysical and time is imaginary. Its wave function then tunnels through the unphysical region and our universe appears on the other side (Stenger,

2009).

With this attempted description, it seems conjectural to assign comparative values to a state prior to the big bang where there appear no equivalent frames of reference. Nevertheless, the Hartle-Hawking supposition remains an acceptable argument for explaining the origins of the big bang. So why should it seem to anyone unacceptable to assign a state vector for consciousness in this wide context:

Let us assume that any given individual exists as a potential before it observes itself for the first time as a sentient being. Think of the combined potential of all possible sentient beings as a state vector. At a given point in space and time, this state has a value. In quantum mechanics, the square of this value gives the probability for finding a particle at a certain point in space at a certain time, per unit volume. But, in the context of the noumenon of consciousness, any equivalent values determine the probability for finding a particular individual self out of all the potential individuals that could ever have existed.

One may well ask, what is consciousness in this context? For example, is it a wave or is it a particle, that it can be physically observed, if only by ourselves as ourselves? What exactly is the nature of the physical interaction that is taking place when we look in a mirror? We remain unable to explore the 'thing-as-such' just as physicists were originally unable to determine if photons were particles or not. Nevertheless, although unable to determine the empirical object of consciousness, one can use a reductive explanation of phenomenal experience to divide consciousness into constituent phenomenal parts and be satisfied with the formulation of an underlying quantum model whose correspondence limit gives rise to the classical characteristics that we all recognize as our specific conscious experience… which is phenomenal.

Conclusion

The phenomenon of our experience is the property we identify as consciousness, which is why a reductive explanation of phenomenal experience would seem to explain consciousness. However, the specificity of our conscious experience tells us, that following a reductive explanation of phenomenal experience, questions as to the exact nature of consciousness remain unanswered. We are still left with the question as to why each of us happens to be the individual we are, rather than anyone else. Nevertheless, the lack of observational reference does not prevent exploring quantum principles to explain the noumenon of consciousness. Indeed, this is an attractive prospect:

1) It assigns value to the vocation of individual choice and free will.
2) It identifies an evolutionary purpose to individual choice in terms of its effect on the path of consciousness.
3) Advancing the concept could demonstrate that the consciousness state is irreconcilably instrumental in the formation of the physical fabric of the universe, thereby entwining our concept of consciousness with the intrinsic properties of our physics concepts both classical and quantum.

Despite the Hierarchical Systems Theory reductive explanation of phenomenal experience, one could interpret nature in the manner of a type-F monist (Chalmers, 2003) as consisting of entities with intrinsic quantum consciousness properties that stand in causal relation within a space-time manifold, where physics emerges from the relations between entities and consciousness emerges from their intrinsic nature.

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