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# Closing the Cartesian Bureau de Change

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Keith Frankish<sup>1</sup>

## Abstract

In *A Philosophy for the Science of Animal Consciousness*, Walter Veit sets out a Darwinian framework for understanding consciousness. He distinguishes various dimensions of consciousness, explores their distribution in different species, and traces their roots to an ancient system of hedonic valence, which evolved to solve complex problems of action selection in early animals. This approach places Veit firmly within a new ‘post-Cartesian’ paradigm for consciousness science, which treats consciousness as a complex functional state, which can be studied by standard scientific means – in contrast to the traditional Cartesian paradigm, which focused on irreducibly subjective qualia and the ‘hard problem’ they present. However, there are places where Veit’s discussion displays residual Cartesian influence. Veit continues to use Cartesian terms such as ‘qualia’, and he suggests that states of hedonic valence play their functional role in virtue of their ‘feel’, implying a subjective realm – a ‘Cartesian bureau de change’ – where intrinsic value is felt and reacted to. This weakens Veit’s presentation, and I urge him to commit to a thoroughly functionalist account. The Cartesian and post-Cartesian paradigms are incommensurable, and in order to achieve a Darwinian revolution in consciousness studies, the concept of an irreducibly subjective mental realm must be completely abandoned.

## Keywords

animal consciousness, consciousness, Cartesian paradigm, evolution, functionalism, hard problem, illusionism, post-Cartesian paradigm, qualia

Handling Editor: Walter Veit, University of Reading, UK

## Introduction

Evolutionary biologist Theodosius Dobzhansky said that nothing in biology makes sense except in the light of evolution (Dobzhansky, 1973). In *A Philosophy for the Science of Animal Consciousness* (Veit, 2023), Walter Veit sets out to apply this dictum to the feature that seems to offer most resistance to evolutionary explanation – consciousness. Drawing on the latest work in evolutionary biology, cognitive ethology, and neuroeconomics, he reverse-engineers consciousness, distinguishing its various dimensions and grades, and discussing their distribution in different species. Working backwards, he traces the roots of consciousness to an ancient evaluative system, which evolved to manage the complex action-selection problems faced by early forms of animal life in the Cambrian period. The result is an enormously impressive and important book, which should be read by all consciousness researchers.

I am strongly sympathetic to Veit’s approach, and I believe that Veit is right to home in on evaluation as the core of the multifaceted phenomenon we call ‘consciousness’. I won’t dive into the details here. Instead, I want to set Veit’s approach within a wider theoretical context. Much thinking about consciousness continues to be shaped by what I shall call the *Cartesian paradigm*. This paradigm is deeply rooted in our intuitions about our own minds, but it offers a poor

foundation for a science of consciousness, and I believe that a new and more fruitful *post-Cartesian* paradigm is emerging. Veit’s approach belongs firmly in this new paradigm, but there are places where I thought I detected residual Cartesian influence, and I want to press him on this.

## The Cartesian Paradigm

By the *Cartesian paradigm*, I mean the view of consciousness promoted by, among others, Ned Block, David Chalmers, and Thomas Nagel. According to these philosophers, a conscious experience is one that it is ‘like something’ to undergo, where this involves its having an intrinsic ‘feel’, which cannot be characterized in functional terms (e.g. Block, 1995; Chalmers, 1996; Nagel, 1974). These intrinsic feels – *qualia* or *phenomenal properties* – are thought of as being *irreducibly subjective*, in the sense that they are accessible only to the subject of the experience and cannot be publicly observed or characterized in third-person terms. In effect, these philosophers conceive of consciousness as a private mental world, where qualia are directly revealed to a self

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or subject, whose own nature typically remains unspecified. Daniel Dennett dubbed this private world the *Cartesian Theatre* – a reference to René Descartes, who argued that the only indubitable knowledge we have is of our own mental worlds (Dennett, 1991; Descartes, 1641/1996).

The Cartesian paradigm sets a distinctive agenda for consciousness studies. The core problem – Chalmers calls it ‘the hard problem’ (Chalmers, 1995) – is to explain the existence of qualia. This is not something that can be done by science alone, since qualia are neither public observables nor theoretical posits introduced to explain observations. (They have the unique status of being *private observables*.) Scientists can investigate the brain states involved in consciousness, but there will always remain an *explanatory gap* between neuroscientific facts and facts about qualia (Levine, 1983). Thus, a neuroscientific theory of consciousness will need to be supplemented by a metaphysical theory of how the public world of brain processes is related to the private world of qualia.

A consequence of this is that we’re not going to be able to develop an evolutionary explanation of consciousness. Such an explanation would be possible only if qualia confer some selective advantage, which requires that they make a causal difference to behaviour. But anything that makes a causal difference is experimentally detectable and can be treated as a theoretical posit defined by its causal role. And any theory couched in such terms would omit properties that are irreducibly subjective. Anything irreducibly subjective will slip the net of evolutionary explanation.

A related consequence is that the study of consciousness has to be human-centred. If our only access to consciousness is subjective, then we must start from ourselves and extrapolate to other creatures. But science alone cannot tell us how to do the extrapolation. It can tell us how similar the brains of other creatures are to ours, but it cannot tell us if they are similar *in the ways that matter for consciousness*. That will depend on what metaphysical theory we adopt of how brains states are related to qualia. And there is no consensus here. Most Cartesians agree that consciousness depends in some way on the brain, but there is wide disagreement as to which aspect of the brain is crucial – whether it is quantum effects inside cells, abstract informational structure, representational content, higher-order monitoring, and so on. In short, consciousness exists in a parallel realm whose connection with the biological one is obscure, and the prospect of finding any theoretical consensus about animal consciousness is slim, to say the least.

## The Post-Cartesian Paradigm

The Cartesian paradigm has been hugely influential, and many materialists still feel the pull of what Dennett calls *Cartesian gravity* (Dennett, 2017). But, as we have seen, the paradigm provides a poor basis for understanding the origins and functions of consciousness. What’s more, it has internal problems, which have led its advocates to adopt increasingly extreme positions, such as the *panpsychist* view that all matter is conscious

(e.g. Goff, 2017; for criticism, see Frankish, 2021). Unsurprisingly, then, a number of philosophers have argued that we should expunge the image of the Cartesian theatre, dispense with the notions of qualia and phenomenal properties, and accept that conscious experiences, like other psychological states, are functional states, which can be fully characterized in terms of the causal role they play within the cognitive system. (This role is likely to be extremely complex and fine-grained, and much experimental work will be required to elucidate it.) This view is known as *qualia eliminativism* or, more recently, *illusionism* (e.g. Dennett, 1988, 1991, 2005; Frankish, 2017), and it can be seen as defining a new *post-Cartesian* paradigm for consciousness science.<sup>1</sup> Whereas the Cartesian paradigm centres on what conscious experiences are ‘like’ intrinsically, the post-Cartesian one focuses on what they *do*. What difference does consciousness make? Dennett calls this the *hard question* (Dennett, 1991, 2018).

This paradigm re-sets the agenda for the study of consciousness. First, there is no hard problem or explanatory gap. What was supposed to make the hard problem hard was that consciousness couldn’t be conceptualized in functional terms. If it can, then explaining it is, in Chalmers’s terms, an ‘easy’ problem (albeit a fiendishly difficult one!), which can be tackled by the sciences of life and mind. Likewise, there is no explanatory gap; brain states *realize* conscious states, and the facts of neuroscience ultimately explain the facts of consciousness. Second, we shouldn’t give special authority to introspective claims in our study of consciousness. Consciousness is fully a part of our shared public world, and we can investigate it like any other natural phenomenon, starting with a range of paradigm cases and using all the experimental techniques and theoretical tools available to us. In doing this, we should take account of subjects’ introspective reports, but we should not assume that they provide deep insight into the nature of consciousness, any more than we assume that perceptual reports provide deep insight into the nature of our environment. In the end, consciousness is what our best empirical theory of consciousness says it is. (If it is a single thing at all; our pretheoretical groupings may conflate phenomena that are significantly different.)

It is worth stressing that, while post-Cartesians deny the existence of qualia, they do not deny the reality of conscious experiences themselves – of pains, pleasures, tastes, smells, and so on. They merely propose that we rethink what these states *are* – that we think of them as complexes of activated perceptual sensitivities and reactive dispositions, including self-regulatory ones (the mix of external and internal factors Veit discusses), rather than irreducibly subjective qualia.<sup>2</sup> Nor do post-Cartesians deny that there is a sense in which conscious experiences are subjective, internal, and private. Conscious experiences are subjective in the sense that they manifest the organism’s individual *take* on current stimulation – the psychological reactions it evokes in them; they are internal in the sense that they occur within the organism, and they are private in the sense that they are often hard for others to detect. But they are not *irreducibly*

subjective, don't belong to a *metaphysically* private world, and are not *essentially* private.

## Veit's Darwinian Standard

With this background, let us return to Veit. Sensibly enough, Veit avoids getting bogged down in discussion of philosophical theories of consciousness. The study of consciousness, he proposes, should be guided, not by conceptual analysis, but by a practical Darwinian standard:

[T]his standard [for a science of consciousness] should not be the cherished insight derived from human first-person experience, but the modern twenty-first century theory of evolutionary biology, the one theory that a biological approach to consciousness should not be neutral towards. (Veit, 2023: xi–xii)

That is, instead of focussing on human consciousness and trusting our introspective intuitions about it, we should adopt an evolutionary and ecological perspective, recognize that consciousness comes in many forms and gradations, and focus on understanding its varied functions.

It is only by asking the functionalist question of what consciousness in all of its varieties and gradations does for healthy sentient agents within their normal ecological lifestyles and the natural environments they have evolved in that we can transition towards a true biological study of consciousness. (Veit, 2023: xiii)

Veit then gets down to the job of distinguishing different aspects of consciousness and using the tools of evolutionary theory and cognitive ethology to theorize about their functions, origins, and distribution.

All of this – the decentering of introspection, the focus on functional questions, and the search for evolutionary explanations – indicates a strong affinity for the post-Cartesian paradigm.

## The Pull of Cartesian Gravity

So why do I say that I detect residual Cartesian influence in Veit's discussion? Partly, it is a terminological matter; Veit continues to use terms, such as 'qualia' and 'phenomenal states', which are strongly associated with the Cartesian paradigm. It is true that he does not mean to use them in a strong Cartesian sense; he is clear that he does not, and that his aim is to re-engineer and naturalize these notions:

[M]y goal is to naturalize this notion [of qualia] through an investigation into the most rudimentary beginnings on the evolutionary path towards the complexities of human consciousness. In the eyes of philosophers sitting in the Nagel and Chalmers camp, this might make me an eliminativist, but a better description of this approach would be revisionist, since we revise the notion of qualia in a naturalistically unproblematic manner. (Veit, 2023: 51)

I see the move towards understanding the biological basis of valence and affects as a naturalization of the vexing notion of 'qualia' through an alternative non-vision-centric model of consciousness. (Veit, 2023: 66)

Veit endorses Patricia Churchland's recommendation that we start with a number of uncontroversial examples of the thing we are interested in and let our concept of the thing evolve in the course of our empirical theorizing about it.

There is no need to provide a philosophically satisfactory concept of consciousness or health before we can begin to investigate them, any more than we would need to define the concept of koala before we can learn about their enjoyment of eucalyptus leaves. (Veit, 2023: 5)

When it comes to the concepts of consciousness itself and of particular types of conscious experience, I am in agreement with this. As I explained earlier, we should focus on paradigm cases and let our concepts develop along with our theorizing (see also Frankish, 2023). However, it is a different matter with concepts such as *qualia*, *phenomenal properties*, and *phenomenal consciousness*. These are not empirical concepts in the ordinary sense. We can't get together and point to uncontroversial examples of qualia, as we can with koalas; each of us would have to point inwards to something unobservable to the others. Rather, they are philosophers' notions. Qualia are supposed to be intrinsic properties, which resist functional analysis and are not entailed by facts about structure and dynamics. And the term 'phenomenal consciousness' was coined specifically to mark a contrast with a functional form of consciousness (Block, 1995). To use these terms for functional properties invites misunderstanding and accusations of failing to address the real problem.

Moreover, these concepts are not treated as being open to revision in the light of scientific theorizing, as empirical concepts and theoretical constructs are. Qualia are understood as properties whose essence is directly revealed to us in introspection (e.g. Goff, 2017). According to Cartesians, we already know what the essence of a pain quale is, and empirical investigation won't enlighten us further. (They often quote Louis Armstrong's remark about jazz: 'If you have to ask, you ain't never going to get to know' (Block, 1978).) Indeed, introspective claims about qualia are often treated as unrevisable axioms that *constrain* scientific theorizing. (This is precisely the role they play in Integrated Information Theory, discussed by Veit in Chapter 3 of his book.) So there is plenty of scope for confusion if we treat qualia as everyday observables or explanatory posits.

It is true that we often talk about what our experiences are *like* – for example, describing a pain as sharp and stabbing – and post-Cartesians agree that when we do this we are talking about something real and important, albeit something not irreducibly subjective. And it might be useful to have a neutral term for whatever properties such talk tracks, which isn't associated with a specific, nonfunctional conception of the referent. But if we

do, then it would be better to coin a new one – I have proposed ‘quasi-phenomenal properties’ (Frankish, 2016) – rather than trying to repurpose theoretical terms deeply embedded in a fundamentally different paradigm.

## A Cartesian Bureau de Change?

So far, my concerns have been terminological. But I also sensed the pull of Cartesian gravity in another, more substantial way. Veit traces the origins of consciousness (the ‘dawn of qualia’ [Veit, 2023: 75]) to a simple form of evaluative experience, ‘minimal hedonic valence’, which first appeared in the active multicellular animals of the Cambrian explosion. These animals faced complex problems of action selection, and Veit argues that states of hedonic valence provided an efficient way of comparing different actions and making adaptive choices, serving as a local psychological proxy for fitness-maximization – ‘a proximate common currency’ (Veit, 2023: 75). Veit argues that the other dimensions of consciousness (sensory experience, self-experience, synchronically and diachronically unified experience) were later additions, built around this ancient evaluative system.<sup>3</sup>

This is an attractive and plausible story, which does a lot to demystify consciousness. It leaves us with a question, however. *How* do states of hedonic valence perform their work of motivating adaptive choices? Veit doesn’t say explicitly, but he sometimes writes as if they do so in virtue of their experienced feel. He speaks, for example, of ‘a commanding sensation’ (Veit, 2023: 74), ‘an imperative plus or minus “feel”’ (78–79), ‘a psychologically real *felt* common currency’ (84; italics in original), and ‘some kind of “quasi-intrinsically” motivating states of hedonic valence’ (85).

This suggests a Cartesian view: valenced states have an intrinsic feel, a hedonic quale, which directly moves the organism to act. And that assumes a Cartesian theatre – or a Cartesian bureau de change – where the intrinsic value is presented to the organism, felt, and reacted to. Veit often talks of *reducing* the explanatory gap and *minimizing* the challenge of the hard problem (e.g. Veit, 2023: 87, 114), as if acknowledging that an explanatory gap and hard problem still remain at the basic level of hedonic value. But if hedonic valence is irreducibly subjective, then the hard problem remains as hard as ever and the explanatory gap as wide. A tiny one-dimensional Cartesian bureau de change is just as much a challenge to a physicalist worldview and an obstacle to evolutionary explanation as a florid multidimensional Cartesian theatre.

My suspicion is that Veit is doing a little fudging here, trying to make a functionalist picture more attractive to those with Cartesian commitments. This would explain a couple of otherwise puzzling remarks he makes about hedonic feel and functionalism.

Such a view provides us with an answer to those who insist that functionalist accounts of consciousness cannot explain the ‘feel’ of experience, since it is precisely this subjective experiencing that does the functional work of dealing with

motivational trade-offs; it enables organisms to efficiently deal with their species-specific pathological complexity. (Veit, 2023: 100)

[T]he ‘hard problem’ of why things feel a certain way does not appear to be as much of a challenge within a hedonic framework ... Things feel a certain way, because they have to feel that way to be functional (Veit, 2023: 117)

But how could this be? How could the feel of a valenced state be essential to its function? A physical state does not need to have an intrinsic feel in order to play a certain functional role. Any state will do, provided it has the right effects in the right context – and the effects are all that evolution is sensitive to.

Perhaps Veit intends ‘feel’ to be understood in a metaphorical sense. Perhaps he is proposing that our *talk* of the ‘feel’ of experience can be elucidated by reference to the functions of evaluative states. (This would accord with his frequent addition of scare quotes to the word ‘feel’.) If so, I have no objection, but I urge him to be explicit about it and to outline a positive naturalistic account of how states of hedonic valence motivate action – an account of their nature and causal powers, the systems that consume them, and so on. Otherwise, readers may plug the gap with the idea of intrinsically motivating qualia.<sup>4</sup>

## Conclusion

I want to conclude by reiterating my admiration for Veit’s book. If I have nitpicked, it’s only because I believe that the book is an important contribution to consciousness science, and I want it to have maximum impact. My sense is that Veit is operating firmly within the post-Cartesian paradigm, but I feel that he weakens his case by making rhetorical concessions to the Cartesians. It’s nice to be inclusive, of course, but in this case one can’t satisfy both sides. The Cartesian and post-Cartesian paradigms are incommensurable. You cannot provide a scientific, evolutionary explanation of something irreducibly subjective, and it’s best to be clear and open about that, uncomfortable as it may be for some readers. Then we can finally escape the pull of Cartesian gravity, develop a fully naturalistic account of consciousness, and complete the Darwinian revolution.

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## Notes

1. The term ‘illusionism’ is designed to indicate that belief in qualia is due to an introspective illusion or distortion of some kind.
2. Even Cartesians accept that there is a kind of consciousness that can be functionally characterized; it is often called *access consciousness*, in contrast to intrinsic *phenomenal consciousness* (Block, 1995). For post-Cartesians, some form of access consciousness is the whole story.
3. Veit’s account has interesting parallels in the work of Nicholas Humphrey, who locates the origins of consciousness in an evolutionarily ancient response system, which expresses the subjective significance of stimulation (Humphrey, 2006, 2011, 2022).
4. I also felt I detected some fudging in Veit’s remark that ‘we should plausibly think of consciousness in terms of something like a hybrid materialist-functionalist identity thesis (Veit, 2023: 120). I have two worries about this. First, *what* is it that Veit wants to identify with material-functional states? It can’t be qualia. How could something that is irreducibly subjective be identical with something that isn’t? But what else could it be? If Veit means that qualia *talk* tracks material-functional states, then it would be better to put it that way. Second, why suppose that the identity is with something partly characterized in *material* terms, rather than with something wholly functional? Is there an aspect of consciousness that can’t be cashed out in functional terms? If so, which aspect? Of course, the functions involved may be so fine-grained that only specific neural mechanisms can implement them, but that is still functionalism in a broad sense (Dennett, 2005).

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