

Book Reviews

Seth, Anil, *Being You: A New Science of Consciousness*.
London: Faber & Faber, 2021, pp. 1-358.

Ubiquitously anticipated and unanimously praised, *Being You: A New Science of Consciousness* is finally here for us to read. The title immediately clarifies Seth's almost insanely ambitious aims. He doesn't "just" propose a *new theory* of consciousness—he puts forth a whole *new science* of consciousness. Thus, *Being You* should thus ideally be shelved next to Wundt's *Grundzüge der physiologischen Psychologie* or James' *Principles of Psychology*, as one of the foundational moments of a science of consciousness. Yet, unlike the *Grundzüge* and James' *Principles*, *Being You* is a joy to read. Seth masterfully and seamlessly weaves together autobiographical memories, jokes, awe-inspiring experiments and computational modeling, so that every single page of *Being You* feeds the reader an easily digestible, but thought-provoking, morsel of information. And that's a deliberate choice by Seth—for *Being You* is also a popular book, aimed at *introducing* the layperson to some of the most recent empirical and theoretical developments in the mind sciences.

Such ambitious objectives would be a recipe for disaster in the hands of pretty much any scholar. Yet, Seth not only manages to avoid the disaster—he actually manages to write a *good* book. Indeed, I want to be extremely clear on this point: *everyone* interested in consciousness should read *Being You*. The layperson will find an accessible introduction to some of the most exciting recent scientific and philosophical developments; philosophers of mind and consciousness researchers will no doubt appreciate the way in which Seth cohesively weaves together so many different conceptual and empirical threads, as well as the rich apparatus of footnotes pointing them to some of the most advanced and technical material available at present.

The book articulates in four sections. The first, *LEVEL*, lays down the conceptual groundwork for Seth's project, and introduces the reader to numerous empirical measures of consciousness. It also introduces the reader to *Integrated Information Theory*—one of the sources from which Seth's inspiration springs.¹ Then, the two sections *CONTENT* and *SELF* expose Seth's view. Seth argues our phenomenology crucially (and constitutively) depends on us being *beast machines*: physically embodied agents busy keeping themselves alive. To do so, as prominent neurocomputational theories prescribe,² we must constantly model our bodies, the external world, and how their interaction impinge on the spike trains the brain receives. This model is used to predict (in the statistical sense of the term) the incoming sensory inputs, and to control their influx overtime, thereby ensuring that each beast machine will encounter conditions favourable to its survival. It is these *endogenously generated* predictions that determine the content, shape and

¹ For the uninitiated reader: Integrated Information Theory is a scientific theory of consciousness suggesting that consciousness is identical to certain informational properties of physical systems. For an accessible introduction, see Tononi, G. 2012, *PHI*, New York: Pantheon Books.

² For expository purposes, I will treat *Predictive Coding*, *Predictive Processing* and *The Free-energy Principle* as if they are a single theoretical object. They're not, but this is not the place to discuss this matter. For an introduction, see Clark, A. 2013, "Whatever Next? Predictive Brains, Situated Agents, and the Future of Cognitive Science", *Behavioral and Brain Sciences*, 36, 3, 181-204.

overall feel of our perceptual, bodily and emotional phenomenology. Thus, our experience is revealed to be a *controlled hallucination*. A *hallucination*, for it is something we *generate from the inside*, based on our models. But *controlled*, for in normal (non-pathological) cases it is responsive to the sensory inputs our transducers receive from the external world. Seth supports this view calling upon the results of a myriad independent lines of inquiry, each based on a different empirical methodology, ranging from classic experimental paradigms based on binocular rivalry (26) to the usage of “hallucination machines” built exapting DeepLearning technology (124-127). In this way, Seth’s book is also an implicit eulogy to methodological/experimental pluralism in the sciences of the mind. Lastly, the section OTHER closes the book, briefly dealing with the topic of non-human (animal and artificial) consciousness. A brief epilogue then provides a summary of the main ideas exposed throughout the book, helping the reader to put all the pieces together.

As I said above, *Being You* is a good book, and it deserves all the success and praise it got. But, like every good book, it is in no way perfect. In fact, it presents several shortcomings.

One concerns the more “popular” side of the book. While Seth manages to present two complex, “math-heavy” theories of the mind such as *Integrated Information Theory* (Chpt. 3) and *The Free-energy Principle* (Chpt. 10) in an accessible manner, his exposition might end up creating some “scientific myths” in the general public.

For example, when presenting the Free-energy Principle, Seth does *not* clearly distinguish between physical and information-theoretic entropy and free-energy (197-98). And while the two *are* related,³ and it is thus *tempting* to take such a conceptual “shortcut” during a popular exposition, Seth’s exposition still adds to a growing list of popular expositions of the Free-energy Principle mis-representing it as a *physical* theory of life and the mind.⁴

Another example: Seth presents his own beast machine theory as a middle ground between Integrated Information Theory and the Free-energy Principle (206-207). But this is guaranteed to mislead the inexperienced reader. Seth’s theory is grounded in cybernetics considerations that are now part of the “canon” of the Free-energy principle and that are alien to the theoretical perspective of Integrated Information Theory, as integrated information theorists promptly noticed.⁵ Thus, Seth may inadvertently end up painting a distorted picture of Integrated

³ For some discussion of this point, see: Andrews, M. 2021, “The Math Is Not the Territory: Navigating the Free-Energy Principle”, *Biology and Philosophy*, 36, 6, 1-19; Linson, A. et al. 2018, “The Active Inference Approach to Ecological Perception: General Information Dynamics for Natural and Artificial Embodied Cognition”, *Frontiers in Robotics and AI*, 5, 21.

⁴ Cf. Solms, M. 2021, *The Hidden Spring: A Journey to the Source of Consciousness*, New York: Norton & Company, Chpt. 7; Gallagher, B. 2020, “A Neuroscientist’s Theory of Everything”, *Nautilus*, <https://nautil.us/a-neuroscientists-theory-of-everything-9059/> last accessed 02/05/2022. See also Friston, K. 2013, “Life as We Know It”, *Journal of the Royal Society Interface*, 10, 86.

⁵ On Seth’s cybernetic inspiration, see Seth, A. 2015, “The Cybernetic Bayesian Brain”, in Metzinger, T. and Windt, M.J. (eds.), *Open MIND*, Frankfurt am Main: The MIND Group, 1-24. For the perspective of integrated information theorists, see Albantakis, L. 2022, “Being You - Part I & II”, *Conscious(ness) Realist*, <https://www.consciousnessrealist.com/being-you-I/>, last accessed 03/05/2022.

Information Theory for the general public—a pressing worry, given that there are not that many popular expositions of Integrated Information Theory.

A second shortcoming is that Seth's conceptualization of the nature of experience inadvertently changes throughout the book—perhaps, without Seth even noticing. In Chpt. 4, Seth introduces the topic of perception, characterizing our perceptual experience as “a neuronal fantasy that remains yoked to the world through a continuous making and remaking of perceptual best guesses, of controlled hallucinations” (87). That process, Seth elaborates, is a complex form of statistical inference based on the brain's best models (Chpt. 5). So, according to Seth, it seems we do not perceive *reality itself*; rather, we perceive some *inner statistical reflection* of it. There is nothing intrinsically “weird” about this: whilst strictly speaking neutral on the matter, the Free-energy Principle and Predictive Coding have often been taken to support this indirect and inferentialist view.⁶ What *is*, weird, however, is that this indirect and inferential view is soon replaced (Chpt. 6) by Clark's “non-indirect”, enactive account of experience.⁷ In fact, Seth now suggests that our models are means *through which* we perceive (and “bring forth”) a structured and meaningful world (87). What is perceived, thus, is *the world itself*, rather than our best guesses about it. Later still, Seth apparently becomes a full-blown enactivist and endorses the *direct social perception* thesis, according to which we are able to *directly perceive* emotions and other mental states (166-67, 300).⁸ The reader is thus left to wonder *which* account Seth is actually defending. Is perception the output of an unconscious inference, or a form of direct contact with the world? If the latter, then in *what* sense perception is a hallucination? And if the former, then how can we possibly *directly perceive* anything, let alone mental states?

Seth's overall metaphysical stance concerning consciousness seems similarly unclear. While it *is* clear that Seth is a reductive materialist busy providing a physicalist explanation of consciousness, Seth never specifies the *specific* brand of materialism he endorses. He only says he's agnostic about functionalism (17-18, 248-49), but that is not to say much.⁹ This is especially troublesome, given that Seth aims at supplanting the *hard* problem of consciousness (and the neural correlate of consciousness research agenda) with the *real* problem of consciousness and a neuro-mechanistic agenda.¹⁰ Indeed, it seems to me that there is an important

⁶ On the neutrality of predictive processing, see Drayson, Z. 2018, “Direct Perception and the Predictive Mind”, *Philosophical Studies*, 175, 12, 3145-64. On other popular indirect and inferentialist accounts, see Frith, C. 2007, *Making Up the Mind*, New York: John Wiley and Sons; Hohwy, J. 2013, *The Predictive Mind*, New York: Oxford University Press. For a radically different reading, see Orlandi, N. 2016, “Bayesian Perception Is Ecological Perception”, *Philosophical Topics*, 44, 2, 327-52.

⁷ See Clark, A. 2015, *Surfing Uncertainty*, New York: Oxford University Press, 170-71, 188-96, 288-91.

⁸ On the direct social perception thesis, see Gallagher, S. 2020, *Action and Interaction*, New York: Oxford University Press.

⁹ Note, *en passant*, that predictive processing is standardly interpreted as a functionalist theory. See Hohwy, J. 2015, “The Neural Organ Explains the Mind”, in Metzinger, T. and Windt, M.J. (eds.), *Open MIND*, Frankfurt am Main: The MIND Group, 1-22.

¹⁰ Notice, however, that whilst Seth wants to exhibit the mechanisms of consciousness, and that he defines “mechanisms” according to the neo-mechanist tradition (281), that tradition does *not* play a large role in *Being You*.

tension between Seth's reductive materialism and the real problem. Let me clarify.

First, what is the real problem? It is a bit unclear. Seth characterizes it in many potentially conflicting ways. Sometimes, he describes the *real* problem as the problem of explaining, controlling and predicting the phenomenal properties of experience (22), as opposed to the *hard* problem of explaining why experience exists in the first place. Other times, Seth characterizes the real problem as addressing a *comparative* explanatory gap (284)—an explanation of why certain neural goings on are “accompanied by” *this* experience rather than *any other*, staying silent on why they're accompanied by an experience in the first place. What is clear, however, is that the *real* (as opposed to the *hard*) problem, motivates a *piecemeal* approach to the explanation of consciousness.

Sometimes Seth describes this approach as motivated by the idea that there is no *single* mechanism of consciousness; rather, consciousness is the collective product of the operations of numerous mechanisms (for example 28-30; 58, 70-71). The progressive discovery of these mechanisms will then *dissolve* (rather than bridge) the explanatory gap (31). This is clearly reminiscent of Dennett's approach,¹¹ whose influence Seth acknowledges (283). Indeed, at times (e.g. 86) Seth follows Dennett in denying that experienced qualities are instantiated in the mind. This denial, the piecemeal approach motivated by the real problem, the idea that the hard problem should be dissolved and Seth's adherence to an illusionist-friendly neurocomputational theory,¹² all push Seth towards an *eliminativist* (rather than reductive) form of materialism.

However, aside from a note (282), Seth never explicitly manifests eliminativist tendencies. Indeed, one of his starting points is that consciousness is not only real, but “all there is” for a conscious subject (3). Yet, if we consider Seth a realist about consciousness, then it is far from clear that his beast machine doctrine is something *over and above* a very fine-grained search for the neural correlate of consciousness. After all, if Seth, as he does, does not specify *what sort* of reductive dependence relation holds between the neural goings-on and our phenomenology, then all he's exhibiting are sheer *correlations* between the two. But, as Seth aptly notices (27), correlations are not explanations. Seth's reductive materialism would thus fail to satisfy the real problem.

In conclusion, Seth has not *yet* explained what it is like to be someone—at least, not the way he wanted. But he managed to indicate a starting point for that inquiry, and to provide a set of empirical (and, to a lesser extent, conceptual) tools to develop an explanation. And so, at the end, *Being You* can rightfully sit on your shelf near James and Wundt, as a founding figure of a science is now up to us to develop.

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¹¹ Dennett, D.C. 1991, *Consciousness Explained*, New York: Little Brown.

¹² See Clark, A. et al. 2019, “Bayesing Qualia: Consciousness as Inference, Not a Raw Datum”, *Journal of Consciousness Studies*, 26, 9-10, 19-33.

Goff, Philp, *Galileo's Error: Foundations for a New Science of Consciousness*. London: Rider, 2019, pp. 1-240.

Galileo's Error: Foundations for a New Science of Consciousness by Philip Goff has already become one of the most talked about recent books on philosophy of mind. Indeed, this work fits in and gives even more force to the so-called *panpsychism renaissance*,¹ a view whereby the difficult problems of philosophy of mind can be solved by positing that consciousness is ubiquitous. Panpsychism has also gained popularity among scientists lately.²

Galileo's error pointed out by Goff is the counterpart to *Descartes' Error*, which gave the title to Antonio Damasio's famous 1994 book.³ One can argue that in a quarter of a century the pendulum of studies on mind and consciousness has swung once again. Damasio's account of neuroscientific experiments and their philosophical interpretation was intended to deal the final blow to any form of dualism between mind and body, thanks to a materialistic explanation. His basis was the now famous case of the worker Phineas Gage, who changed personality after an iron bar was driven through his brain. Instead, Goff argues from a strictly philosophical point of view that we still have no explanation of how the electro-chemical activity of the brain manages to create the subjective internal world of colours, sounds, smells, and tastes that we all experience.

The bulk of the *pars destruens* of Goff's argument was accomplished by his earlier book *Consciousness and Fundamental Reality*: a more extensive, more technical work that received much praise as well as specific criticism.⁴ In it, he tried to dismantle the physicalist approach to consciousness, starting with the fact that there is no clear definition of what matter is, and arguing for a version of panpsychism anchored in Russellian monism.

Galileo's Error consists of five chapters and is written in a simple and rigorous way, in order to reach a wider audience than the narrow but fierce circle of philosophers of mind. In the first chapter, entitled "How Galileo created the problem of consciousness", the author explains how, in his opinion, the difficulty of giving a scientific account of consciousness arose. Goff is an advocate of the evidence of personal phenomenology, the 'conscious experience' that characterizes our 'subjective inner life'. Everyone knows for certain that they exist as conscious beings. Consciousness is therefore "fundamental to what we are as human beings. This is not to undermine the importance of the body: we are embodied creatures [...]. But it is consciousness that defines the identity of the person" (3). Consciousness

¹ Strawson, G. 2006, "Realistic Monism: Why Physicalism Entails Panpsychism", *Journal of Consciousness Studies*, 13, 10-11, 3-31; Skrbina, D. (ed.) 2009, *Mind that Abides: Panpsychism in the New Millennium*, Amsterdam: John Benjamins; Blamauer, M. (ed.) 2011, *The Mental as Fundamental: New Perspectives on Panpsychism*, Frankfurt am Main: Ontos; Shaviro, S. 2014, *The Universe of Things*, Minneapolis: University of Minnesota Press; Roelofs, L. 2019, *Combining Minds: How to Think about Composite Subjectivity*, New York: Oxford University Press; Chalmers, D.J. 2016, "The Combination Problem for Panpsychism", in Brüntrup, G. and Jaskolla, L. (eds.), *Panpsychism*, New York: Oxford University Press.

² Tononi, G. and Koch, C. 2015, "Consciousness: Here, There and Everywhere?", *Philosophical Transactions of the Royal Society B*, 370, 1-18.

³ Damasio, A.R. 1994, *Descartes' Error*, New York: Random House.

⁴ Goff, P. 2017, *Consciousness and Fundamental Reality*, New York: Oxford University Press.

is also “the source of much that is of value in existence [...] it is our experiences that make life worth living” (4).

Galileo's “error” is quickly stated. He was the scientist who contributed more than any other to founding the scientific method, and he did so by realizing that until then theories of nature had not been framed in mathematical language because scholars considered the world to be full of sensory qualities such as colours and sounds that could not easily be captured by mathematics. Galileo solved this problem “with a radical reimagining of the material world” in which “objects don't really have sensory qualities” (16).

In the world redesigned by Galileo, objects have only four characteristics: size, shape, location, and motion. The sensory qualities, instead, are part of the soul. A lemon is not yellow, the yellowness exists in the soul of the individual who perceives the lemon, and the same goes for tastes, smells, and other sensations, which are thus forms of consciousness in the human soul. But if the qualitative cannot be explained by the quantitative, consciousness will forever be excluded from scientific explanation and understanding. By condemning consciousness to be essentially and inevitably mysterious, Galileo therefore created the problem of consciousness.

How can we remedy this “error”?—Goff asks. He discusses three possible answers. The first is dualism, the subject of the book's second chapter, entitled “Is There a Ghost in the Machine?”. Despite the reference to Gilbert Ryle's scepticism, Goff offers a sympathetic presentation of this classic view of the mind-body relationship. Dualism places an immaterial mind in relation to a body subject to physical laws. The intuition that something exists beyond the material realm seems plausible in light of the fundamental role of consciousness. With a persuasive negative argument, the author points out that dualism might not be able to explain the causal connection between consciousness and the brain, but the same happens when physics (that denies the possibility of an interaction between the physical and the non-physical) postulates, on the basis of experimental observations, unexplained laws governing the causal interactions of matter. In this way, even the dualist could “postulate basic and unexplained laws governing the causal interactions of mind and brain” (30).

But, unfortunately for proponents of naturalistic dualism, writes Goff, the failure to find any detectable sign of possible anomalous interaction in the brain goes against dualism. And even resorting to quantum mechanics does not seem to help, because postulating that the conscious mind intervenes in resolving the superposition in the Schrödinger equation takes consciousness to have a marginal causal role since “the role of the mind is merely to say, ‘Let superpositions be resolved!’, and then physics in conjunction with random chance determines what actually occurs” (47). Ultimately, even if physicalists do not have the last word, dualism does not seem able to properly account for mind-brain interaction and, even if it could, the theory is not sufficiently parsimonious compared to monistic theories.

Goff then turns to analyze materialism, which is the subject of the third chapter, entitled “Can Physical Science Explain Consciousness?”. Here the question mark conceals a clear position, which the author expresses in these terms, “My central claim is that materialism can't possibly be true for the same reason that there can't be square circles or time-traveling patricide: the materialist theory of consciousness involves a contradiction” (65-66). The point is that consciousness involves *qualities* and is *subjective* (and includes adopting someone's *perspective*).

Physics, on the other hand, aspires to describe the world in purely objective terms, a characterization of reality that can be grasped by anyone regardless of their perspective. “Materialists who claim both that reality can be exhaustively captured in the quantitative language of physical science and that there is quality-rich consciousness contradict themselves” (68).

Accordingly, Goff presents some well-known thought experiments to demonstrate the inconsistency of materialism. The first is Mary’s room experiment, about a neuroscientist who knows everything about the physiology of colour perception while living inside a black and white room: when she comes out and actually *sees* a red tomato, she learns something she did not know. The description is discursive but philosophically precise, so that even non-specialists can understand the subtleties of the debate concerning the thought experiment proposed by Frank Jackson (by the way, in an endnote, justice is done to the fact that Howard Robinson devised a similar argument in the same year, which did not achieve the same notoriety).⁵ Here the author introduces relevant personal anecdotes: he talks about being accused of believing in magic by Patricia Churchland for having criticized an argument in favour of materialism, and gives an account of a long discussion with Daniel Dennett, during a cruise where they gave a lecture and debated physicalist criticism of the knowledge argument.

The zombie argument (it is logically possible that there are individuals who are equal to us in behaviour but are not conscious) is the second thought experiment that the author highlights. He claims that if a physical system has objective, quantitative properties, this does not entail that the system has qualitative, subjective properties as well. In addition, illusionist perspectives on consciousness are rejected based on an article by Galen Strawson in which they are described as “the silliest claim ever made”. Indeed, Goff here quotes Strawson, who said: “To seem to feel pain is to be in pain. It’s not possible here to open up a gap between appearance and reality, between what seems and what is”.⁶

Chapter 4, entitled “How to Solve the Problem of Consciousness”, goes to the heart of the author’s proposal. He recalls that, in his early days as a philosopher, he was first a materialist and then almost a dualist, until he read Thomas Nagel’s article “Panpsychism”,⁷ “the view that consciousness is a fundamental and ubiquitous feature of physical reality” (113). Panpsychism sounds crazy, Goff admits, but the hypothesis must be well specified.

The light of consciousness never switches off entirely, but rather fades as organic complexity reduces, thorough flies, insects, plants, bacteria, and amoeba. For the panpsychist, this fading-while-never-turning-off continuum further extends into inorganic matter, with fundamental physical entities—perhaps electrons and quarks—possessing extremely rudimentary forms of consciousness, to reflect their simple natures (114).

⁵ Robinson, H. 1982, *Matter and Sense: A Critique of Contemporary Materialism*, Cambridge: Cambridge University Press.

⁶ Strawson, G. 2018, “The Consciousness Deniers”, *New York Review of Books*, <https://www.nybooks.com/daily/2018/03/13/the-consciousness-deniers>.

⁷ Nagel, T. 1979, “Panpsychism”, in Nagel, T., *Mortal Questions*, Cambridge: Cambridge University Press, 181-95.

If consciousness is a fundamental aspect of matter, then panpsychism avoids the problems faced by dualism with interactionism and materialism with qualitative features. Goff does wonder whether postulating consciousness as something existing and non-reducible counts as an explanation. To tackle this point, the author draws an analogy with electromagnetism, whose properties were postulated as fundamental by Maxwell without resorting to other reductive explanations. Another ally recruited by the author is Eddington,⁸ with his redefinition of physics as a tool for prediction. This leads to the problem of intrinsic natures. Physics does not say what matter is but only what matter does. It is then necessary to broaden the spectrum of quantitative science to make room for the explanation of qualitative consciousness if we are to have a theory of everything.

In this way, the perspective is reversed: we do not have to try to explain how consciousness emerges from the brain, but to see that the only thing we know directly is consciousness, while we know nothing about the intrinsic nature of matter. This is Eddington's conclusion, which is adopted by Goff: consciousness is the intrinsic nature of matter, since at least the matter inside the skull manifests consciousness and the matter inside the skull has continuity with the matter outside it. It should also be pointed out that this form of panpsychism is not dualistic: the physical properties of a physical particle are themselves forms of consciousness.

With such a culture shift as the one Goff advocates for, panpsychism may seem to solve the great question of consciousness from which the book started. But a serious problem plagues panpsychism. According to it, the consciousness of higher living beings is derived from the experience of the basic components of their brain. The *composition problem* is to explain how the individual micro-experiences of each brain's constituents are welded into the unitary consciousness of the individual. If we cannot account for the consciousness of higher animals—including humans—the enterprise of panpsychism does not seem well underway.

According to Goff, the composition problem, however, is less difficult than the gap faced by materialism, because the former is related to things of the same kind, while the latter has to combine quantitative and qualitative features. The point, rather, is that the composition problem has not yet been convincingly solved. The author proposes two avenues that he sees as promising. The first borrows from the research on split brains. By considering the dissociations and duplications of consciousness in individuals who previously had a unitary consciousness, we can try to understand what causes these disorders and thus what processes make consciousness unitary.

The second avenue has to do with quantum mechanics and in particular the entanglement effect, whereby the quantum state of one particle cannot be described independently of the quantum state of another. The idea is to overcome the micro-reductionism of classical physics, whereby one has to add up the individual basic particles to obtain consciousness and move to an emergentist approach that takes into account that conscious systems in the brain are, like entangled systems, more than the sum of their parts and are based on basic laws of nature.

Goff concludes the chapter with a manifesto for post-Galilean science, which can address both the quantitative data of physical science and the reality of the

⁸ Eddington, A.S. 1928, *The Nature of the Physical World*, London: Macmillan.

qualitative aspects known through the immediate awareness of our own experience. This new science includes realism about consciousness, empiricism, anti-dualism, and panpsychist methodology.

In the last chapter, entitled “Consciousness and the Meaning of Life”, the author addresses some more general implications of endorsing panpsychism. Firstly, we should change our attitude towards the natural environment, if it is true that plants, as well as non-living matter, are endowed with consciousness in different degrees. Goff speaks of a new worldview suitable for overcoming speciesism and offering a new relationship with nature.

In analogy to the argument used to defend panpsychism, the author also defends free will as something basic that we cannot necessarily explain and yet can be a given, but not in the same way as our consciousness, since consciousness is indisputable, “I am more certain of the reality of my feelings and experiences than I am of anything else” (197). Finally, he considers a form of naturalized spirituality. Goff states: “Panpsychism offers a way of “re-enchanting” the universe. [...] My hope is that panpsychism can help humans once again to feel that they have a place in the universe. At home in the cosmos, we might begin to dream about—and perhaps make real—a better world” (217).

Some argue that panpsychism is too bizarre, not only for our common sense (which incorporates Stone Age metaphysics, as Russell joked),⁹ but also for scientific observation. But Goff’s point is precisely that science does not have the tools to detect and explain consciousness. And being counterintuitive is not a good reason to reject a theory, quite the contrary.

One criticism that can be made against Goff is that he simplifies the philosophical history of consciousness and Galileo’s claims, to better serve his main thesis. The practical success of science explains its diffusion more than the ontological partition it proposes; the method itself counts more than the underlying theory of qualitative and quantitative features of reality.

The key objection, however, is that there are no more convincing arguments in favour of panpsychism than there are against materialism and dualism. Goff postulates panpsychism as a plausible alternative, to the exclusion of other theories. The defence of panpsychism through the analogy with Maxwell’s electromagnetism—neither theory explains the nature of reality, they account for a basic phenomenon—does not seem to hold because it is the very same argument (the failure to explain the very nature of reality) that is used in the *pars destruens* against Galilean science supporting materialism.

In addition, the two strategies presented by Goff to deal with the composition problem are no more than a suggestion yet to be developed, despite the robust premises put in place. In other works, not intended for a broad audience like this one, however, the author has explored the metaphysical technicalities of the subject.

Finally, the consequences of panpsychism are treated only very briefly. In particular, there is no discussion of the moral status that comes with consciousness at its various levels, yet it would be impossible for human beings to flourish if they were to consider every object a bearer of equal rights as endowed with consciousness.

⁹ Russell, B. 1914, *Our Knowledge of the External World*, London: Allen and Unwin.

Having said that, *Galileo's Error* has already been at the centre of a fruitful debate involving both philosophers and scientists,¹⁰ and even if one does not view the central thesis of the book as persuasive, one can fully agree with Goff's recent statement: "It's time non-reductionists about consciousness stopped justifying their existence and got on with building an interdisciplinary research program to rival the dominant materialist paradigm".¹¹ This is undoubtedly the great merit of this book, which will long be a reference for non-materialists about mind and consciousness and a constant prod for those who rest too comfortably in scientific materialism.

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Papineau, David, *The Metaphysics of Sensory Experience*.
New York: Oxford University Press, 2021, pp. xi + 163.

In our everyday life, we are (almost) constantly experiencing something. In particular, a crucial role is played by sensory experience, understood as encompassing both the traditional five senses and other modalities such as proprioception and nociception. While this is relatively uncontroversial, a consensus is still lacking when it comes to the *nature* of sensory experience. Provided that sensory experience consists of the instantiation of conscious sensory properties,¹ how should we think of such properties?

Three options are usually considered in the literature. The first one is naïve realism, that takes conscious sensory properties to be relational properties putting experiencing subjects directly in contact with worldly objects and their features. Sense-datum theories are the second option. In this case, sensory experience is understood as a relation of direct awareness between subjects and *sense data*, a special kind of mental objects. Finally, one can opt for the view that conscious sensory properties are representational ones.

David Papineau's latest book, *The Metaphysics of Sensory Experience*, explores a fourth alternative. The book is remarkably clear in its goals, being made up of a *pars destruens* and a *pars construens*. First, standard views on the nature of sensory experience are criticised and rejected. In particular, Papineau insists on the fact that conscious sensory properties are not essentially representational. After that, Papineau presents and defends the view that conscious sensory properties are qualitative non-relational properties instantiated by experiencing subjects. In what follows, I will provide an overview of the content of the book.

Chapter 1 starts by laying the groundwork. In particular, Papineau makes explicit that his interest is exclusively in the nature of *conscious* sensory experience, although the possibility of unconscious perception is not rejected. After that, the chapter presents and criticises naïve realism and sense-datum theories. Different objections against naïve realism are considered, but Papineau's point ultimately

¹⁰ Goff, P. and Moran, A. (eds.) 2021, "Is Consciousness Everywhere? Essays on Panpsychism", Special Issue of *Journal of Consciousness Studies*, 28, 9-10.

¹¹ Goff, P. 2021, "Putting Consciousness First: Replies to Critics", *Journal of Consciousness Studies*, 28, 9-10, 289-328.

¹ Note that this is the way Papineau understands sensory experience in the book.

rests on the claim that this view puts us in “danger of losing our hold on the idea of consciousness” (27). As a matter of fact, naïve realists hold that there are conscious differences between cases of veridical and non-veridical experience. At the same time, they admit that experiencing subjects are typically unable to introspectively tell veridical perceptions apart from hallucinations and illusions. As a result, naïve realists need to allow for conscious differences that experiencing subjects cannot detect by introspection, and this is at odds with our very notion of consciousness. Sense-datum theories avoid these difficulties by providing a uniform account that accommodates both veridical and non-veridical sensory experience. According to the advocates of these theories, seeing a red tomato and hallucinating it equally involve a relation of sensory awareness between the subject and a non-physical, mind-dependent sense datum that is indeed red and tomato-shaped.² While acknowledging the merits of sense-datum theories, Papineau rejects them by contending that sense data hardly find space “within any sensible ontology” (29)—more on this later.

The last sections of Chapter 1 and the whole of Chapter 2 are devoted to the discussion of representationalism. First of all, a *caveat* is made. Papineau’s target is not the view that conscious sensory properties contingently represent features of the world—on the contrary, this is taken for granted in the book. What Papineau has in mind is rather *essential*—as opposed to contingent—representationalism, namely the view that sensory conscious properties are “one and the same as representational properties” (31). After clarifying this distinction, Papineau goes through a number of initial considerations in support of essential representationalism (henceforth, simply “representationalism”), showing that they are unable to favour this view over contingent representationalism. Then, he digs deep into the metaphysics. First, he puts pressure on the idea that the phenomenal character of conscious experience depends on correlations between representational vehicles and the environment, rather than on internal neural states. Second, Papineau criticises representationalists’ appeal to transparency, insisting on the fact that, according to representationalism, uninstantiated worldly properties would be somehow mysteriously present in experience. Building upon these considerations, Papineau provides his main argument: (1) representation is a matter of non-concrete relations to abstract, uninstantiated properties; (2) sensory experiences are concrete facts, with causes and effects; (3) therefore, sensory experience is not essentially representational.

In Chapter 3, Papineau starts developing the qualitative view of sensory experience, according to which “conscious sensory properties are intrinsic qualitative properties of subjects” (83). After briefly highlighting some advantages of his own view over representationalism and stressing the fact that, *pace* Block and Peacocke, sensory experience is *purely* qualitative, Papineau focuses on the distinction between quasi-object and intentional objects. Quasi-objects, as well as their stable sets of quasi-properties, are elements “*within* the realm of experience”, metaphysically independent of the worldly objects that might cause them (94). Intentional objects, instead, are taken to be the objects sensory experiences are “directed at”, and they might or might not exist depending on whether the experience is veridical. Papineau is sceptical about intentional objects, but he is willing to make a

² Papineau briefly considers an alternative view according to which sense data are physical objects (i.e., brain states); see Note 4 below. Otherwise, he maintains that sense data are non-physical and mind-dependent objects.

concession. What he rejects is rather the identification of intentional objects with quasi-objects: while the existence of the former depends on the veridicality of experience, quasi-objects are always there, even in case of hallucination or illusion.

In the final chapter, Papineau clarifies different aspects of his account and addresses some related issues. After drawing attention to the difference between the qualitative view and sense-datum theories, he focuses on the notions of awareness, transparency, attention, and introspection, as well as on the way they are intertwined. Among other things, Papineau argues that experiential states are always conscious, but we are not necessarily always aware of them. Far from being automatic, awareness of sensory experience results from introspective attention. Later in the chapter, after pointing out that his own account of introspection is consistent with the phenomenal concept strategy against Jackson's knowledge argument, Papineau points out the difference between the qualitative view and adverbialism. While these two views largely agree on the metaphysics of sensory properties, adverbialism comes with an account of linguistic descriptions of experience that is definitely not part of the qualitative view. Finally, some remarks on the richness of sensory contents are made.

Papineau's book is extremely rich in content and ambitious in scope. A considerable number of highly debated issues are addressed—which is quite remarkable, given the limited length of the book—and arguments against widely held views abound. It is therefore likely that Papineau's book will elicit further technical debate on both the critique of representationalism and the details and implications of the qualitative view. Before concluding, let me make some brief comments focusing on the general line of reasoning that is developed in the book.

Papineau's strategy for vindicating his position is clear. First, the problems affecting standard views about the nature of sensory properties are highlighted. Then, it is shown that the qualitative view is a viable option that is immune to those problems. Accordingly, the strength of the *pars construens* is directly proportional to the strength of the *pars destruens*. As we have seen, a great deal of effort is put into rejecting representationalism, whereas naïve realism and sense-datum theories receive a shorter treatment—in particular, the latter are swiftly dismissed. Note that this difference in treatment is intentional. From the very beginning, Papineau is explicit about the fact that his main target is representationalism. However, one could wonder whether this brevity could weaken Papineau's defence of the qualitative view, especially when it comes to rejecting sense-datum theories.

True, sense-datum theories are not the prevailing position in the philosophy of perception. Hence, Papineau's choice of addressing such views by briefly pointing at his own reasons for rejecting them is perfectly reasonable. Still, the reader might find these reasons unsatisfying. In particular, Papineau's treatment of sense-datum theories seems to be at odds with the neutral stance that the rest of the book maintains towards the mind-body problem. Despite being known for being a physicalist, Papineau stresses on various occasions that "none of the arguments of this book need even presuppose physicalism" (90). Yet, sense-datum theories are dismissed precisely because the ontology of sense data is "undermined by modern arguments in favour of physicalism" (29). More precisely,

Papineau has in mind the causal argument hinging on the causal closure principle.³ On these grounds, he contends that sense data would be either epiphenomenal or unacceptable due to their violation of this principle.⁴

I do not wish to explore the extensive literature on causal closure. My point is just that Papineau's line of reasoning does rest on some physicalist presuppositions. That being said, this does not seem to be a significant limitation. After all, physicalism is by far the prevailing view in the metaphysics of mind. In addition, other grounds for rejecting sense-datum theories seem to be available.

To conclude, Papineau's *The Metaphysics of Sensory Experience* is an excellent book. In little more than 150 pages, it originally addresses disputed technical issues and at the same time it provides the reader with an accessible introduction to the topic—although the book is not meant to be introductory. Regardless of the objections that could be raised against Papineau's arguments and views, *The Metaphysics of Sensory Experience* is definitely worth reading.

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³ Cf. Papineau, D. 2002, *Thinking about Consciousness*, Oxford: Oxford University Press; Gibb, S. 2015, "The Causal Closure Principle", *The Philosophical Quarterly*, 65, 261, 626–47.

⁴ The possibility of identifying sense data with brain states, thereby avoiding the risk of epiphenomenalism, is also considered. However, it is immediately rejected due to the fact that sense data are taken to bear the perceived properties that we typically ascribe to ordinary material objects (e.g., blueness and roundness), and brain states can hardly have such properties.