

# PANPSYCHISM AND THE PROBLEM OF CONSCIOUSNESS

*Richard Gault explores a revolution in scientific and philosophical thought*



The idea that everything in the world has some form of consciousness is ancient and ubiquitous. In past times, people took it for granted that mineral, plants and animals had souls, and that the sun, moon and stars embodied degrees of higher intelligence. But since the seventeenth century, western science has limited consciousness to human beings, and other realms have been regarded as merely ‘matter’, passive and inert. Consciousness has even been regarded as an insignificant epiphenomenon. It is a sign of huge change, therefore, that some contemporary philosophers are returning to the idea that consciousness, not matter, is the foundation of the universe. Here, Dr Richard Gault reviews some of the new books emerging from this new movement.



Elizabeth It is early days – or years – but it is already possible to glimpse a significant, possibly epochal difference between this century and the last. The difference concerns consciousness. For much of the 20th century scientists and philosophers generally ignored or dismissed consciousness as a subject unworthy of study. It was a subject that brought a “risk to one’s reputation” as Annaka Harris, the author of a recent popular introduction to the topic, has put it. [1]

Now two decades into a new century, consciousness has gained respectability in academic circles. Serious debate is going on. The outcome could be the most fundamental change in the scientific understanding of reality in a long time – or to be precise, since Galileo in the sixteenth century. Here I want to sketch the debate and show why it is significant. Revolutions are rare, but their effects far reaching.

This article has been largely inspired by the work of the philosopher Philip Goff, whose book *Galileo’s Error* [2] was published at the end of last year and received widespread attention. The book is Goff’s attempt to convey the new thinking about consciousness to a broader audience, and it is written in an accessible style which keeps things as simple as he can. But it is based upon his earlier, more academic and technical work *Consciousness and Fundamental Reality* [3], which is one of several important (and weighty) philosophical works on the subject which have appeared over the last five years. In this article, I will also be referring to works by David Chalmers, Thomas

Nagel, Annaka Harris and Bernardo Kastrup amongst many others, as well as William Seager, the editor of a remarkable compilation of papers, *Routledge Handbook of Panpsychism*, [4] which has been published only in the last few months.



Linus talking to Charlie Brown in *Peanuts* by Schulz



# The Big Problem of Consciousness

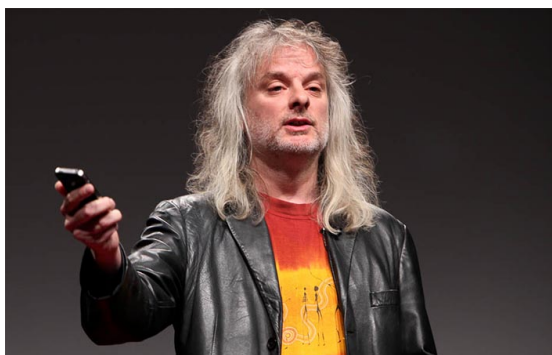
Is it not odd that scientists and philosophers should have largely ignored consciousness in recent centuries? After all, as Thomas Nagel reminds us: “The experience of consciousness is both one of the most familiar and one of the most astounding things about the world.” [5, p. 53] Indeed Goff maintains that it is “the only thing we know for certain is real.” [2, p. 4].

Goff uses the pronoun ‘we’ but strictly that should have been ‘I’. Like Descartes – whose “*cogito ergo sum*” (“I think, therefore I am”) became a foundational realisation for the scientific revolution – I know that *I* am conscious but there is nothing else about reality that a sceptic could not raise plausible doubt about. That includes knowing whether other people also have consciousness. It could be that everyone I meet is actually a very sophisticated A.I. robot or ‘philosophical zombie’ as Goff terms them – beings who are programmed to behave as if they are conscious but are not. The point is that consciousness is personal. I cannot get inside another person’s head to experience and so know their consciousness. And despite all their efforts, neither can any neuroscientist. As Annaka Harris puts it, “... we can’t find reliable external evidence of consciousness, nor can we conclusively point to any specific function it serves. These are both deeply counter-intuitive outcomes...” [1, p. 65]

So consciousness is at one and the same time both the most real of phenomena and the most elusive. According to Goff, its very nature means that “... nothing is harder to incorporate into our scientific picture of the world.” [2, p. 5] But as Charles Schulz had Linus say in the *Peanuts* cartoon: “No problem is so big or so complicated that it can’t be run away from.” And this is how western science has responded to the question of consciousness – to run away, ignore or deny it.

Goff argues that the blame for this failure or dereliction of duty can be pinpointed at the very beginning of modern science. It was Galileo’s error 400 years ago that has blinded scientists and philosophers to this most quintessential of human properties. The Tuscan genius proposed that two classes of phenomena should be recognised and so distinguished. There were those that could be objectively measured – namely size, shape, location and motion – and those that could not, that is, sensory phenomena, such as colour and taste, which were not amenable to quantification. As Goff explains, science confined itself to the former. “Galileo took the sensory qualities [...] out of the domain of inquiry by reimagining them as forms of consciousness residing in the incorporeal soul.” [2, p. 19] Hence “Galileo’s error was to commit us to a theory of nature which entailed that consciousness was essentially and inevitably mysterious.” [2, pp. 21–22]

Science has progressed since then on the basis of Galileo’s prospectus: measure and mathematise what you can; ignore what you cannot. He can hardly have imagined how successful such a method of enquiry would be. Now scientists can measure and model photons of light, brain neurons firing, galaxies moving billions of light years away. Yet for all that it has achieved science has failed to find a Theory of Everything, cannot account for 96% (yes, 96%!) of the mass and energy of the universe, and cannot ‘incorporate’ consciousness, the most subjectively real of phenomenon.



Philosopher David Chalmers at TEDxSydney in 2011.  
Photograph: First Light Photography

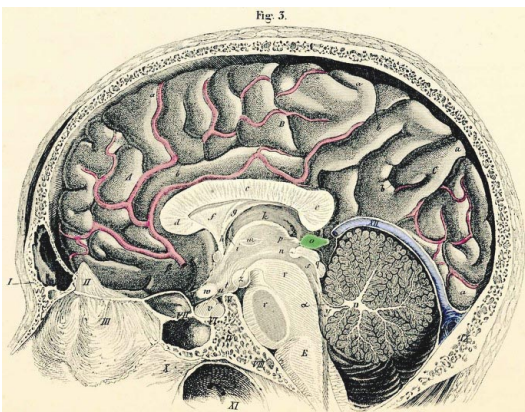
# The Hard Problem

What then accounts for consciousness recently becoming a serious subject for scientists and philosophers? One can speculate that the rise of A.I. has provoked questions about whether intelligent machines could also be conscious. Then there has been the advance of neuroscience and the inevitable questioning of what the brain is actually doing, and the inability of physics to find the foundational elements of matter. But possibly more than anything, Goff maintains, it was simply three little words.

The words were spoken in Arizona in 1994 by David Chalmers, a man whom Goff describes as being at the time ‘the rock star philosopher’. Chalmers rocked (to coin a phrase) the philosophers and scientists who had gathered at the first ‘Science and Consciousness’ conference in Tucson – an event which had itself been inspired by the rapid growth in consciousness studies during the 80s and 90s. Chalmers told these pioneers that they were only studying ‘easy’ problems, such as what happens in the brain when we learn, remember or recognise. But the problem that needed addressing, he said, was ‘The Hard Problem... the problem of *experience*. When we see, for example, we *experience* visual sensations: the felt quality of redness, the experience of dark and light, the quality of depth in a visual field”. “Why”, he went on to ask, “should physical processing give rise to a rich inner life at all?” [6, p. 2] According to Goff, “With his simple three-word phrase, Chalmers swept away decades of evasion and forced us to confront the real mystery head-on.” [10, p. XX] (For a video of this talk, [click here](#) [1].)

And the mystery is: how can a material thing, the brain, be linked to immaterial consciousness? Maybe mind and matter are essentially different but somehow interact, as dualism has it. Or maybe consciousness is actually a material product of a material brain, real but as insubstantial as a shadow compared to what produces it? This is the materialist approach. A third and most radical explanation is offered by panpsychism, which is basically the theory that consciousness pervades everything – the name is derived from the Greek *pan* meaning all and *psyche* meaning mind or spirit. This is the theory which is animating the current debates about consciousness and is the one which Goff himself embraces.

There is a possible fourth answer. There are still philosophers, such as Daniel Dennet, who say that there is nothing to be explained. Consciousness can be ignored because it is simply an illusion. However, Galen Strawson has pointed out that: “... this particular denial is the strangest thing that has ever happened in the whole history of human thought, not just the whole history of philosophy”. [7, p. 114] Most philosophers nowadays speedily reject the non-reality of consciousness by remarking that to experience an illusion is itself to have a conscious experience. As Chalmers has said, conscious experience “... is the most central and manifest aspect of our mental lives.... A theory which denies the phenomenon ‘solves’ the problem by ducking the question.” [6, pp. 7–8] So if consciousness is not an illusion, how does contemporary science and philosophy attempt to explain it?



The Pineal Gland. Nineteenth-century diagram of the brain showing the pineal gland at the centre (region o, green) Image: Professor Dr. Carl Ernest Bock, *Handbuch der Anatomie des Menschen*, Leipzig 1841. From a scan originally published at: Anatomy Atlases [1] (edited)

## The Problem with Dualism

In a certain sense, the most widely held theory is that of dualism. This theory acknowledges the reality of consciousness but regards it as something essentially different from the reality of matter. Reality as a whole therefore comprises two things: material things, such as bodies and brains (as well as stars, tables and much else); and immaterial minds or consciousness.

Dualism's most famous philosophical advocate was Descartes but it has a much longer and wider support. As Goff remarks: "Most cultures and religions we know about have embraced dualism in some form or other... [it] is a very natural way to think about ourselves." [2, p. 27] The biologist Rupert Sheldrake, who has challenged many aspects of the western scientific view, concurs: "In practice, most people take a dualist view for granted, as long as they are not called upon to defend it." [7, pp. 110–11] What needs explaining is the interaction problem. How can something immaterial (mind) bring about change in something material (body)? I think I want to raise my arm and up it goes, but how is that possible?

Descartes thought the pineal gland was the seat of the soul and exercised control of the body from there. That answer has not been persuasive. A more contemporary and sophisticated solution which Goff outlines might be offered by quantum mechanics. In the sub-atomic world, he explains, "... observation seems to make a difference to how the universe behaves." [2, p. 41] This has encouraged some philosophers, including David Chalmers, to seek the phenomenon of consciousness in 'quantum dualism'. Though Goff thinks this is "... a fascinating approach that deserves to be explored in detail", [2, p. 48] he is critical of it. As he explains, quantum dualism ultimately severely limits the role of consciousness to "... far less [...] than we intuitively suppose the mind to have." [2, p. 48] Raising my arm would then be largely a product of non-conscious, physical quantum behaviour, but it would not really be *my* behaviour as we actually experience it.

Hence the standard objection to dualism is simply that in the 400 years since Descartes formalised it, no satisfactory solution to the mind–body problem has been found. Goff himself rejects dualism by appealing to the wisdom of Ockham's razor – that, is, the principle of parsimony. There are alternative solutions to the problem of consciousness which regard reality as being one thing rather than two. The best known of these is materialism.



The Surrealist masterpiece "The Treachery of Images" by René Magritte, which pointed out that the full, experienced nature of things cannot be captured within images and words. Photograph: adeevce [/]

## The Problem of Materialism

According to materialists, we live in a material universe. Everything from the smallest atom to the largest galaxy is made up of matter – or matter and energy, for Einstein showed these to be just two aspects of the one coin. Furthermore, the characteristics and behaviour of matter can in principle be explained in terms of mechanistic, cause–effect relationships between material objects and forces.

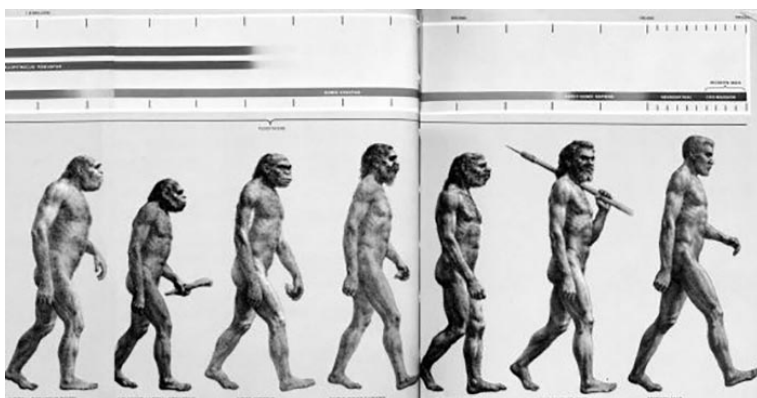
As the working assumption, materialism has served science and technology extraordinarily well over the past centuries. We can appreciate, then, that scientists and philosophers would want to explain consciousness in physical terms as a material phenomenon. And even if materialistic science cannot currently explain it, does this mean that in the future it will not be successful? Materialists can appeal to history. Look at Galileo himself. Galileo thought that colour was something immaterial. However, following his advice to measure and model, it relatively quickly became apparent that the yellow of a banana, for example, could be explained in terms of the physical properties of light, of the banana skin, and of the eye. Likewise materialists argue that the idea of consciousness as something categorically distinct from material neurological processes is a flawed – though understandable – misconception. Scientific investigation will eventually and completely dispel this misunderstanding.

It is this belief that Chalmers so radically challenged in his 1994 conference talk. What he called ‘the hard problem’ of consciousness has revealed a fundamental flaw at the heart of materialism. He points out that science can only explain the performance of cognitive functions; there are sophisticated theories available to explain learning, or how the brain processes information and so enables vision, for example. But cognitive science never has, and never can tell us ‘*why the performance of [such] functions are accompanied by experience?*’ [original italics, 6, p. 20]

Chalmer’s criticism is illustrated and made clearer by Goff when he cites the famous case (in philosophy circles) of ‘Black and White Mary’. In this thought experiment poor Mary has been condemned to be confined to a monochromatic room. All she sees are black and white and shades of grey. She is, however, encouraged to learn all there is to know about colour. She could discourse authoritatively on how a banana radiates yellowness. Then one day Mary is released and so experiences the world of colour. For the first time she actually sees a yellow banana.

The argument is that in seeing it she will know something of yellow that no book had taught her, and could ever have taught her. The conscious *experience* of yellow is in fact something separate and additional to the material, physical accounts of this colour which she had studied and knew.

It was Nagel who first highlighted that to be consciousness means to have experience: to know what it is like to be seeing colour, or in his seminal paper ‘What is it like to be a bat?’ to truly understand, from the inside, the experience of another being. [5] More recently he has set out another reason to doubt that materialism can explain consciousness – the problem of emergence.



Detail from a fold-out illustration in Rudolph Franz Zallinger, ‘The Road to Homo Sapiens’ in F. Clark Howell’s *Early Man* (Time-Life Books, 1965)



Given that consciousness exists, where has it come from? How could it have arisen? Materialist science can give authoritative accounts of the history of the universe from the Big Bang to today. Thanks to Darwin, the story of the evolution of life on earth, from the first single cell organisms 3.8 billion years ago to the variety and complexity of life we now have, can be described. However, Nagel points out, nowhere in these accounts is there an explanation of when or how consciousness appeared. Where in the span of 13.5 billion years or the narrower span of four billion years did matter acquire consciousness? “The existence of conscious minds ... [is something] a theory of the world ... has yet to explain,” he says. “But if we ... want to pursue a unified world picture ... we will have to leave materialism behind. Conscious subjects and their mental lives are inescapable components of reality not describable by their physical sciences.” [5, pp. 30–31]

If the critiques of Chalmers and Nagel were not enough, there is a third and even more damning criticism. Materialistic science rests on a belief in the reality of something it cannot explain – material itself. Whatever else it can do, materialism cannot tell us what material things actually *are*. Science as inherited from Galileo is very well able to describe things. The descriptions are necessarily how material things (matter, energy) interact with other things (for example, with measuring instruments or with each other). The descriptions, then, tell us what things *do*.

But however good such descriptions are – and Galileo would no doubt be amazed at just how good they are at predicting behaviour – they say nothing about what things essentially *are*. To express it pithily if a little technically: physics describes the *extrinsic* properties of matter but has nothing to say about its *intrinsic*, inner nature. Goff illustrates the difference by considering a chess bishop. Knowing what a chess bishop does (it moves diagonally, its extrinsic property) tells us nothing about what it is made of (e.g., wood or plastic, its intrinsic nature). Magritte’s famous ‘non-pipe’ illustrates the same point.

This major lacuna of science was recognised a hundred years ago (around Magritte’s time) by the British philosopher Bertrand Russell and Einstein’s collaborator, the astronomer Arthur Eddington. Drawing on Russell’s book *The Philosophy of Matter* and the new ideas of their contemporary, Alfred North Whitehead, Eddington argued that the intrinsic nature of matter is consciousness. [8] This leads us neatly on to the third possible way of explaining consciousness: panpsychism.



The Green Man, the ancient symbol of universal life and fertility with a history extending back to Mesopotamian civilisation. This carving is in the Chapter House of Southwell Minster in the UK. Photograph: Ian G Dagnall [/] / Alamy Stock Photo

# Panpsychism

Simply put, panpsychism is the view that ‘consciousness is fundamental and ubiquitous in nature’. This is how William Seager introduces it in the *Routledge Handbook of Panpsychism*. However, he goes on to acknowledge that “It is undeniable that panpsychism is intuitively implausible.” [4, p. 1] But is this really the case? Sheldrake remarks that:

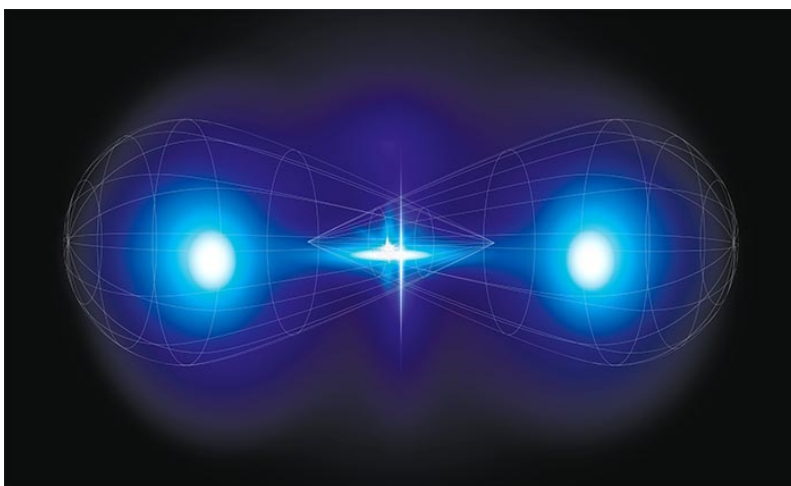
Panpsychism is not a new idea. Most people used to believe in it, and many still do. All over the world, traditional people saw the world around them as alive and in some sense conscious or aware: the planets, stars, the earth, plants and animals all had spirits or souls. [7, p. 116]

Panpsychism at first glance seems to be a theory of the world akin to animism and polytheism. Polytheism has of course long been rejected by the monotheistic religions, whilst animism is regarded as a primitive belief by modern westerners – okay in children’s stories but not to be taken any further. It is little wonder that advocates of panpsychism have found it difficult to get a hearing and even now, Harris says, it “still carries the stink of the New Age.” [1, p. 32]

So why should this revolutionary theory now be entertained by mainstream scientists and philosophers? Goff offers two arguments in its support. First off, it seems that there is no alternative. If we acknowledge that matter must have an intrinsic nature, and also accept that consciousness is real, then it has to integrate with the rest of reality. Consciousness as the intrinsic property of matter therefore plugs the hole at the centre of our scientific story. Secondly, we all know an actual example of matter whose intrinsic property is consciousness – our own brains. The simplest hypothesis is therefore that consciousness is also the intrinsic nature of all other matter.

Additionally there is growing empirical support for panpsychism. Consciousness has traditionally been thought to be confined to human beings and animals, but recent research has demonstrated that plants have memory and can exhibit purposeful behaviour. [9] This suggests that they have a form of consciousness (which may trouble vegetarians and vegans, Goff notes as an aside).

As for the so-called inanimate realm, Goff brings the example of quantum entanglement. Quantum entanglement is an extraordinary and puzzling phenomenon in which the behaviour of two subatomic, quantum particles can be shown to be correlated even though they are so widely separated that no signal can pass between them even at the speed of light (the separation can even be millions of light years). An explanation could be that both particles share a common source of consciousness. There is also the idea that electrons are guided by information (they are ‘in-formed’) and this receptivity to information can be seen as a form of consciousness.



Conceptual illustration of quantum entanglement. Two particles share coherence in quantum state: position, momentum, spin, and polarisation in a way that seems to defy the laws of time and space. Photograph: local\_doctor [/] / Shutterstock



## There Is Panpsychism and There Is Panpsychism

However, while all panpsychist philosophers share the belief that consciousness is inseparable from matter, there are differing ideas about how the two integrate. There are two broad sorts of explanation: bottom-up and top-down.

The bottom-up theory is called ‘micropsychism’. It is a theory compatible with the general, analytic methodology of science, referred to as ‘smallism’; that is, “... the view that facts about big things are grounded in facts about little things, e.g., the table exists and is the way it is because the particles making it up are related in certain extremely complicated ways.” [10] So micropsychism tries to explain a larger consciousness such as a brain in terms of the consciousness of its individual neurons. But how is this achieved? This is called the ‘combination problem’ which Goff tells us is “... currently the main focus of the panpsychism research program.” [2, p. 148]

But in some ways, the combination problem is an irrelevance, because there is increasing recognition that in the end, there is actually nothing to combine. For the fact is that the search for the ultimate stuff out of which reality, the physical world, is composed has yielded the surprise that there is none to be found. Matter simply does not exist. As Seager writes: “It turns out that matter is nothing at all like ‘matter’ was supposed to be.” Instead, he goes on:

Our best quantum theory asserts that fundamental reality is composed not of material particles at all but of rather strange universal fields, the temporary excitations of which can appear to our experiments as particle-like apparitions. [4, pp. 4–5]

This leads Chalmers to conclude that: “... there are no fundamental micro-entities to be realised by microsubjects, and there are no fundamental properties possessed by these entities to be realized by microexperiences.” [6, p. 363] The absence of matter would seem to be not only an objection to micropsychism, but also an additional and fundamental objection to all materialist theories of consciousness.



Arp 273 Spiral Galaxy, from the Hubble telescope. Image: NASA [1], ESA [1], Hubble [1]: [apod.nasa.gov] – 20 November 2019]

The alternative approach is ‘cosmopsychism’, which is a ‘top-down’ alternative in which consciousness does not develop out of basic elements but appears in matter having ‘come down’ from a larger consciousness. This is radical, as it runs counter to the credo of ‘smallism’; rather, explanations are sought in holism. As Goff explained in a recent article:

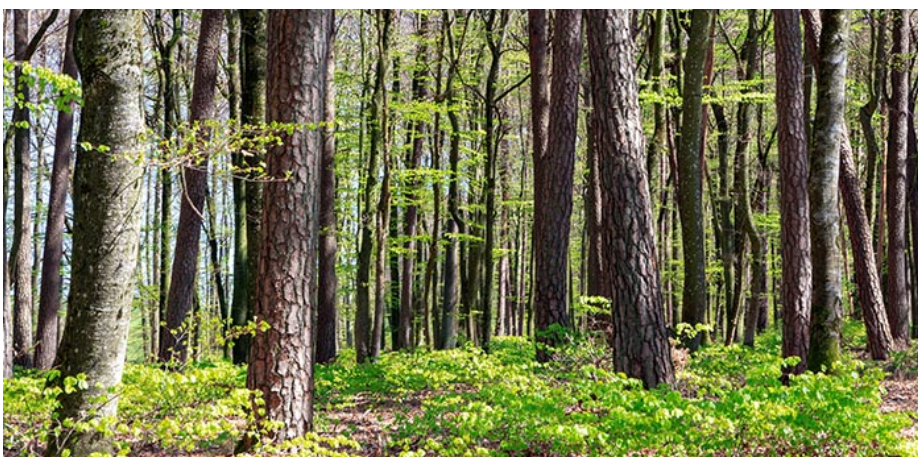
... a number of scientists and philosophers of science have recently argued that [the] ‘bottom-up’ picture of the Universe is outdated, and that contemporary physics suggests that in fact we live in a ‘top-down’ – or ‘holist’ – Universe, in which complex wholes are more fundamental than their parts. According to holism, the table in front of you does not derive its existence from the sub-atomic particles that compose it; rather, those sub-atomic particles derive their existence from the table. Ultimately, everything that exists derives its existence from the ultimate complex system: the Universe as a whole. [11, p. 148]

So my consciousness has come down from a larger ‘cosmic consciousness’, and is devolved in turn to the components of my brain. But whilst this answers some of the fundamental problems found in other models, it also generates a whole new set of questions. How does cosmic consciousness, a unified whole, devolve? Why would it do so? How are we supposed to grasp the idea of a cosmic consciousness which is somehow conceived as being the sole reality? And if my consciousness is a piece of this cosmic consciousness, why does it feel as if my consciousness is my own, not a part of something very much bigger?

These are the questions that now appear to be central, because cosmopsychism has recently become much more the focus for panpsychist thinkers. Not surprisingly, a number of different models are being proposed. For instance, Itay Shani maintains that:

The absolute can be likened to a vast, dynamically fluctuating ocean ... this ocean has two complementary sides: concealed and revealed ... its revealed side ... appears as what, in common parlance, we identify as physical nature. The concealed side, however, is presumed ... to be a vast ocean of consciousness. [12, p. 411]

Bernardo Kastrup likens absolute reality to an ‘oscillating membrane’, [13] while Freya Mathews sees it simply as a field. [14] Goff puts forward a theory in which space-time is not considered to be an empty container within which material objects are located and forces play out; rather space-time is the *only* reality. So-called objects are therefore ‘massy’ regions of space-time ... ‘formless consciousness’ is the intrinsic nature of space-time, while ordinary consciousness is the intrinsic nature of the massy regions. In short: theories are now being explored within the scientific community which would have been unimaginable even ten years ago.



Beech forest in spring. Recent research has begun to reveal the remarkable communal behaviour of plants in general and trees in particular, as summarised in Peter Wohlleben’s *The Hidden Life of Trees*. Photograph: manfredrf [/] / Alamy Stock Photo

## Conclusion

Right now panpsychism and studies of consciousness remain of interest to a minority of philosophers and scientists within their ivory towers. But ideas filter out. Galileo was once a lone and condemned voice. Goff's own prediction is that "In twenty years' time the idea that panpsychism can quickly be dismissed as 'crazy' will seem, well, crazy." [2, p. 172]

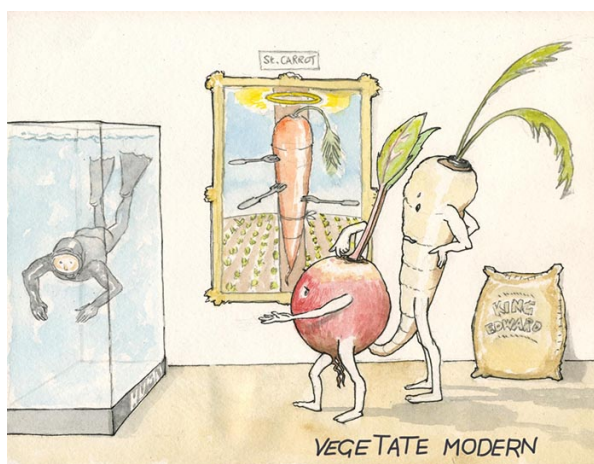
Try to imagine that panpsychism has become the normal, commonly accepted way of seeing reality. That is not easy because we have all grown up in a world in which, at best, matter and consciousness are understood to be separate. But if all matter, all of nature, were regarded as having intrinsic worth, then Goff imagines that there would have to be a new covenant with nature. Rather than the exploitive one that Francis Bacon bequeathed us, the commitment would be to caring for the world. The adoption of panpsychism could therefore have a vital role in dealing with environmental crises such as global warming.

Accepting consciousness as the foundation of reality also has very significant implications for epistemology, our understanding of what counts as knowledge. Currently, that generally means knowledge acquired by the methods of science. Acknowledging panpsychism involves understanding that there are limits to what can be known using traditional scientific methods. This in turn suggests that other methods need to be developed or accepted. Some philosophers, such as Mathews and Kastrup, suggest that we could look to the dreaming of Australian aboriginals and other practices of traditional cultures. The idea that consciousness is the ground of reality is also at the heart of the mystical traditions of the world, and the adoption of panpsychism would validate the methods and practices they have employed for millennia. Thus the already familiar techniques of meditation and mindfulness would be better understood and appreciated.

Such practices can reveal not only knowledge of what things are, but also unveil answers to questions of morality. Goff gives the example of what mysticism can offer. The mystical experience of directly encountering the universal consciousness which we all share makes nonsense of selfish conduct, he argues. He concludes *Galileo's Error* with the words:

Panpsychism offers a way of 're-enchanting' the universe ... [it] can help humans once again ... 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. [2, p. 217]

I cannot quarrel with the dream; instead I say, "Amen to that."



Cartoon by Simon Blackwood



## Image Sources

**Banner:** In some scientific models now being explored, the source of the universe is understood to be like a vast, fluctuating ocean of consciousness, within which material things exist as ‘massy regions’. Photograph: Leonid Ikan/Shutterstock.

**First insert:** A climber plant in Costa Rica, near Orosi, February 2004, growing in a spiral whose form can be described by the Fibonacci series. Photograph: Dirk van der Made via Wikimedia Commons.

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