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# Seeing the consciousness forest for the trees

Towards a map of consciousness



25th July 2024



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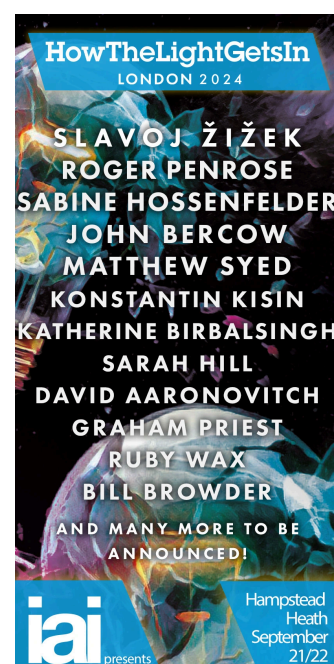
**Àlex Gómez-Marín** | Theoretical physicist and neuroscientist, professor at the Instituto de Neurociencias of Alicante in Spain, and director of the Pari Center in Italy.

1,394 words

Read time: approx. 7 mins

*The American public intellectual and creator of the television series [Closer to Truth](#), Robert Lawrence Kuhn has written perhaps the most comprehensive [article](#) on the landscape of theories of consciousness in recent memory. In this review of the consciousness landscape, Àlex Gómez-Marín celebrates Robert Kuhn's rejection of the monopoly of materialism and uncovers the radical implications of these new accounts of consciousness for meaning, artificial intelligence, and human immortality.*

The scientific study of consciousness was not sanctioned by the mainstream until the nineties. Let us not forget that science stands on the shoulders of giants but also on the three-legged stool of data, theory, and socio-political wants. Thirty years later, the field has grown into a vibrant *milieu* of approaches blessed and burdened by covert assumptions, contradictory results, and conflicting implications. If the study of behaviour and cognition has become the Urban East, consciousness studies are the current Wild West of science and philosophy.



The American public intellectual, international corporate strategist, and PhD in neurophysiology, Robert Lawrence Kuhn is one of the few pioneers attempting to provide some comprehensive order to such a vexed matter. In a recent article entitled “[A landscape of consciousness: Toward a taxonomy of explanations and implications](#)”, the creator and host of the public television series [Closer to Truth](#) has begun to rescue such an ultimate frontier of human knowledge from the sterile provincial quarrels, egocentric delusions of grandeur, and myopic glares that plague the field of consciousness research.



SUGGESTED VIEWING

## The mystery of emergence

With Suchitra Sebastian, Hilary Lawson, Philip Goff, Jack Symes

The origins of our perplexity in making sense of experience itself can be traced back to Galileo Galilei, who programmatically excluded subjective experience from the purview of science. One can interpret this sagacious move as a means to understand nature in two phases: let us first start with what lends itself to measurement and mathematisation (the “primary phenomena of motion and touch”, in Galileo’s words) and leave for later what resists it. “I think that tastes, odors, colors, and so on (...) reside only in consciousness”, he wrote in *The Assayer* in 1623.

**Until quite recently, most researchers could only get their toothpaste in the supermarket monopoly of materialism, a philosophical doctrine often presented as a scientific fact. But things are changing.**

Such a strategy proved tremendously successful, giving rise to physics, then chemistry, next biology, and finally psychology. The progression of scientific disciplines reaped great (but progressively diminishing) returns. Studying matter is, no doubt, hard. But there is something about life and mind that particularly defies the so-called scientific method. Four hundred years later, we can’t ignore the elephant in the room anymore: experience is what makes science possible and yet a proper science of consciousness seems unattainable. The Galilean knot remains untied. Today we call it “the hard problem”.

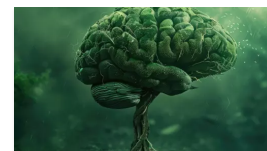
It is ironic and fascinating to note that the hard problem of consciousness has amplified the “toothbrush problem” of theorists. Consciousness researchers treat their explanations much like toothbrushes: everyone has their own, but nobody wants to use someone else’s. Moreover, until quite recently, most researchers could only get their toothpaste in the supermarket monopoly of materialism, a philosophical doctrine often presented as a scientific fact. But things are changing.

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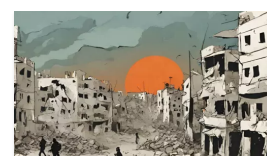
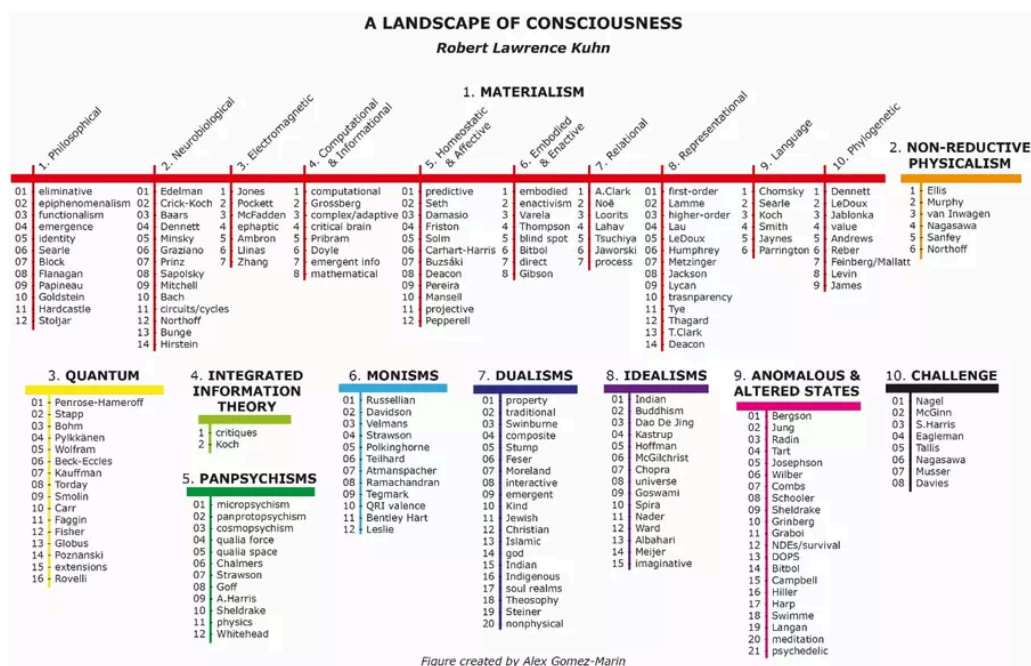
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To hold on to the analogy, an orthodontics of consciousness is coming about. New comprehensive views are allowing to expand our jaws, correct misplaced teeth, and prevent misaligned bite patterns.

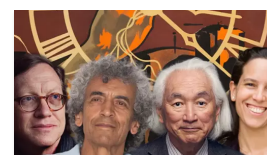
Kuhn's review is a paradigmatic instance of such an individual and collective reckoning. His is not a normal piece of work. It is a beauty and a beast—a unique creature in content and style. It could have been a book, but he decided to publish his *magnum opus* in the journal *Progress in Biophysics and Molecular Biology* as open-access 142-page double-column article. The piece is 175 thousand words long, including nearly a thousand references. In it, Kuhn articulates a taxonomy of about 225 theories of consciousness.



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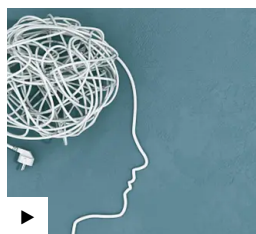
Gathering under the same roof most of the greatest contemporary thinkers of one of the greatest questions one can ever try to answer, Kuhn's landscape enacts the quasi-extinct art of true scholarship. Very few scholars can see beyond their theoretical bellies, nor would devote the time and effort necessary to put such a myriad of views together with his exquisite intellectual humility and rigour. The living proponents (too often deadly opponents) will still agree to disagree but, at least, they can now see the

forest for the trees.

The landscape comprises 10 major categories and it is organised in a gradient of "isms", from die-hard materialist positions to mind-only propositions. Materialism gets a great deal of space and attention with nearly a hundred authors nested in 10 subcategories, such as neurobiological, computational and informational, homeostatic and affective, embodied and enactive, representational, etc. The landscape also makes some dualisms respectable. The (false) two-alternative



forced choice between (promissory) materialism and (ridiculed) dualism is over. Materialism is not the only game in town anymore. Quantum approaches to consciousness do have their deserved place too. We then encounter a great range of fascinating kinds of panpsychism, monism, and idealism. Integrated Information Theory has its own category, remaining the only scientific approach that is philosophically unclassifiable in the landscape.



SUGGESTED VIEWING

## Models, metaphors and minds

With Kenneth Cukier, Mark Salter, Peter Sjöstedt-H, Joanna Bryson

Remarkably, Kuhn devotes an entire section to “anomalous and altered states”, describing decades-long serious scientific investigations on taboo topics such as extra-sensory perception and survival of consciousness after bodily death. I call them “the edges of consciousness” because they are true frontiers of knowledge and also marginalised (stigmatised and/or ignored) by dogmatic skeptics. The final category gathers “challenge theories” which point to the intractability of the mind-body problem. The piece ends underscoring the implications of all such explanations of consciousness for ultimate meaning, artificial intelligence, and human immortality.

Apart from the imperative presence of the godfathers of the field such as Christof Koch and David Chalmers (and along with other legendary philosophers and neuro-celebrities), it is delightful to find a series of not-so-popular but crucial authors such as David Bentley Hart, Michel Bitbol, David Bohm, Jacobo Grinberg, Dean Radin, Rupert Sheldrake, Rudolf Steiner, and Ian Stevenson. When was the last time you read a piece cordially inviting philosophy, neuroscience, quantum physics, psychical research, theology, and religion to the same table?

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**We need a larger Overton window from which to contemplate what we know, what we don't, and what we think we do but actually ignore.**

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Yes, the map is not the territory (nor the terrain). Yes, all models are ultimately wrong (but some are more useful than others). Yes, too often we conflate models with captivating metaphors or cartoonish mechanisms enacting covert metaphysics. And yes, most theories of consciousness aren't mathematically formulated nor empirically testable. Shall we then rush to prune the landscape? Not yet.

Let us enjoy a real taste of epistemic and metaphysical pluralism after years of philosophical monotheism and neuroscientific chauvinism. Of course brains play a



key role in consciousness. But the real question, as William James saw more than a century ago, is whether their function is productive or permissive. Much like the picture of Earth that astronaut William Anders took from the Moon during the Apollo 8 mission, Kuhn's landscape simultaneously offers an orienting and disorienting experience. We need a larger Overton window from which to contemplate what we know, what we don't, and what we think we do but actually ignore.

At the end of the day, beyond the sweet dopamine hit of seeing one's name in the hall of fame, Kuhn's forest may reveal to each and every fervent tree advocate that they are all missing the point but, additionally, that they all have a point. As Leibniz wrote in a letter to Nicolas Remond in 1714, "I have found that most of the sects are right in a good part of what they propose, but not so much in what they deny". Isn't it both commendable and ludicrous to realise that hundreds of extremely clever people think they solved the problem of consciousness and are convinced that everyone else is wrong?

Kuhn's faithful description of each position without the urge to adjudicate deserves nothing but praise and gratitude. This uncommon ability is an urgent antidote to the academic vice of hearing only one's own voice while shouting at each other. In fact, if there is something more interesting than consciousness itself is the sociology of its researchers. Let us leave the consciousness hunger games behind and realise that there is plenty of food for thought for everyone. Rather than divide and conquer, let us unite and wonder.

**Àlex Gómez-Marín**  
25th July 2024

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