



Problems of consciousness (and how to handle them): Interview with Anil Seth

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Tipo de artículo: Entrevistas, Multilingüe.

Disciplinas: Psicología, Filosofía, Neurociencias.

Etiquetas: conciencia, percepción, cerebro, yo, humildad intelectual.

*Anil Seth is Professor of Cognitive and Computational Neuroscience at the University of Sussex and Director of the Sussex Centre for Consciousness Science. He is a leading voice in contemporary consciousness research and the author of *Being you: A new science of consciousness*. In this interview, I talk with Dr. Seth about the science and philosophy of consciousness. The conversation covers his 'real problem' approach to consciousness, the idea of perception as 'controlled hallucination', the constructed nature of the self, and the role of intellectual humility in scientific disagreement. The interview concludes with Dr. Seth discussing the Perception Census, an ambitious citizen science project aimed at mapping the diversity of human experience.*



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Question – To introduce the topic, what's your definition of consciousness?

Answer – I tend to use the classic definition from Thomas Nagel: a system is conscious if there is something it is like to be that system. It's really any kind of experience whatsoever. It's what goes away under general anaesthesia, and what comes back when you come around on the other side. This distinguishes consciousness from other aspects that are often confounded with it, like intelligence or an explicit sense of self, or metacognition or language.

Q – In discussions around consciousness, it's common to hear about the 'hard problem' and the 'easy problem'. Could you briefly describe those?

A – The philosopher David Chalmers defined these two kinds of problems. The easy problem, oversimplifying a bit, relates to how the brain works as

a complex biological system. The hard problem, in turn, is how and why any material processes, any physical causal interactions in the brain, should give rise or be identical to any kind of conscious experience whatsoever. And the intuition in this distinction is that in some mature future of neuroscience, we might solve the easy problem, but still have no idea how to solve the hard problem.

Q – However, you have suggested that there might be another way forward, which you call the ‘real problem’ approach (Seth, 2016). How does the real problem relate to, and is different from, the hard and easy problems?

A – I don’t want to overstate the novelty of this idea. The ‘real problem’ is more just a new label to capture a lot of what many researchers are doing anyway. Basically, it’s recognizing that there’s a lot of middle ground to exploit between the hard problem and the easy problem. Instead of sweeping the mystery of consciousness away under the carpet, or just looking for the neural correlates of consciousness, let’s try to build explanatory bridges between things happening in the brain and body and things happening in conscious experience. Let’s try to explain, predict and control the properties of conscious experience, where these properties are phenomenological, experiential. This is of course what many neuroscientists interested in consciousness tend to do. But I wanted to highlight that, in doing this, we might find a fruitful way of perhaps dissolving, rather than solving, the hard problem of consciousness. In a similar way that biologists 150 years ago didn’t find the ‘spark of life’, but instead dissolved the ‘hard problem of life’ by explaining (and predicting, and controlling) the properties of living systems in terms of physics and chemistry.

Q – In your view of consciousness, the notion of predictive processing is important. What is predictive processing?

A – Predictive processing is the idea that a brain’s central function is to anticipate what its incoming sensory signals are going to be. In this view, the brain is a prediction machine that’s trying to make a ‘best guess’ about the state of the world and the body. If you think about it from the perspective of the brain, the sensory information it gets is always noisy and ambiguous, so it has to interpret it somehow. Predictive processing posits that the brain interprets these sensory signals by making predictions about them, and then using these signals to update future predictions.

Q – Related to this, you refer to our conscious experience as a ‘controlled hallucination’. What do you mean by that?

A – On top of the general idea that our brains are prediction machines, there is the more specific claim, often talked implicitly but certainly explicit in the way I use it, that what we experience is not the readout of the sensory signals, but the content of the predictions themselves. What we experience is actively generated, not passively registered. So, for this idea I use the slogan ‘controlled hallucination’. It’s hallucination in the sense that the experience comes from within; but the control is just as important, as the experience is also calibrated, controlled by sensory signals.

Q – The title of your latest book, “Being you” (Seth, 2021), hints at one of your main topics of interest, the self. How does your view of consciousness challenge our intuitive sense of the self?

A – I think there are two main challenges to the kind of common-sense experience of being a self, at least in the West. Firstly, we tend to think that the self is unified; that there’s an essence of you or me that is sort of unchanging over time. Secondly, we take for granted that the self, which is somewhere inside the head and looks out through the eyes, is what does the perceiving of a world that is out there. I think both of these fairly intuitive conceptions of the self are wrong. So, the self is not one thing, but is composed of many different, changing parts: there is the embodied self, the emotional self, the volitional self, the narrative self, the perspectival self... And all these apparently unified aspects of the self can and do come apart under certain experimental and clinical conditions. Moreover, in my view, the brain is constructing the experience of self



according to the same principles by which it constructs our experiences of the world. In that sense, the self is not what does the perceiving, but a kind of perception itself.

Q – Your perspective seems to mirror key ideas in Eastern philosophy, such as, for example, the Buddhist notion of ‘anattā’ (meaning lack of a permanent, unchanging self). Is your work inspired by Eastern thought or is it rather an example of epistemological convergence between science and philosophy?

A – I think it’s more of the latter, although I certainly don’t rule out some inspiration. I’ve never studied in detail scriptures from Buddhism or Hinduism, but I became aware of them reasonably young, and they were very appealing in some ways. I think there is convergence between science and these traditions, which has been recognised for a long time now, especially for Buddhism. However, there are also core differences. I don’t think that neuroscience is just limited to rediscovering what was already known; I think that what we learn about the brain adds new dimensions. And there are some aspects of Eastern thought which still remain very much in contradiction to a materialist view. So, while I think there’s a healthy interchange between these perspectives, I personally didn’t set out to try to validate a Buddhist perspective on neuroscience. I came at this trying to understand the brain with the tools that I had, which were mainly the tools of science and Western philosophy, and the convergence has been part of the journey.

Q – Buddhism encourages the practice of meditation as a means to positively transform one’s state of consciousness. Psychedelics are a different yet related method known to profoundly alter consciousness, which is increasingly studied these days. In your view, how do meditation and psychedelics affect the mind?

A – I think the two experiences are clearly different, but they may both allow us to challenge this naïve realism we bring to our unexamined everyday life. When in meditation, you might have experiences where you realise that some of what you tend to take for granted in experience is not necessarily always there, such as experiences of ego dissolution, which can be experiential evidence that the self is constructed rather than a given. Psychedelics can do the same. Some psychedelic drugs can bring about a fairly complete form of ego dissolution, where experience continues but the experience of being a self does not. Of course, there are many other similarities and many, many differences too, but I find them both scientifically interesting in how they can reveal a larger space of possible experiences and identify aspects that maybe we shouldn’t be taking for granted.

Q – Going back to the problems of consciousness, to what extent do you think current disagreements between scientific theories of consciousness are due to language issues? For example, regarding how different positions define different key constructs, including consciousness itself.

A – This is a really important issue. We’ve seen this in the recent adversarial collaboration between the Global Workspace Theory and the Integrated Information Theory. They are both very interesting theories of consciousness, but what they’re trying to explain does seem to be relevantly different. That makes it hard to directly compare them. You can take as a historical parallel Newtonian physics and Einsteinian relativity. They were both theories of gravity and they both agreed that they were theories of gravity, and that’s one reason they became more directly comparable. We do not seem to be there yet regarding theories of consciousness. And I think one of the benefits of the adversarial collaboration is that, while it doesn’t solve the problem, it surfaces it and allows it to be addressed. And that’s already a step in the right direction.

Q – Addressing a scientific problem as complex as consciousness seems to require a good dose of intellectual humility. You have alluded to this (Gomez-Marin & Seth, 2025) in response to the recent controversy in which a prominent theory of consciousness has been accused of being pseudoscientific in a letter signed by over a hundred researchers. Could you share your perspective on this debate and the role you think intellectual humility should play in it?



A – As you say, there has been this controversy over the scientific status of the Integrated Information Theory (IIT), about which Alex Gómez Marín and I recently wrote an opinion article. Fundamentally, we both thought that labelling this theory as pseudoscience was not a fair accusation. In our view, IIT is in the business of science, because it makes some testable predictions with at least some explanatory power. There have been other accusations about whether the theory is overpromoted, but those aren't, to me, relevant to whether it's scientific or not. At the same time, on the IIT side, there is a bit of a tendency to claim that the only alternative to their view implies that the brain is some kind of computer and consciousness is some kind of algorithm. And I think that's also wrong. There are many theories that differ from IIT and do not rely on the metaphor of the brain being like a computer.

Overall, when we look back on it, hopefully this will be an instructive episode for students and researchers in the field about how these kinds of disputes can be addressed. I think there are positives that can be drawn from looking at it that way. And one of them, to answer your question, is this humility that acknowledges that consciousness is a tough nut to crack and we don't really understand what a satisfactory solution would even look like. So yes, I think a little dose of intellectual humility is necessary and can go a long way.

Q – *Perhaps intellectual humility would grow naturally from recognising that different people can and do experience the world in different ways. I think this relates to your project Perception Census. To conclude the interview, can you tell us a bit about this initiative?*

A – The core idea behind the Perception Census is that we all have different conscious experiences, even for the same shared objective reality, because our experience is not just a passive readout of the world but an act of construction. So, the hypothesis is that there will be individual differences in perception, just as there are in external aspects such as height, weight, and so on. Of course, we know there are individual differences, this has been studied in psychology for decades, but most previous studies focus on one or a few aspects of perception. We wanted to do this at a much larger scale, looking at many different aspects together to try and understand whether we have perceptual personalities, perceptual fingerprints. I think this is such an interesting question because we likely underestimate how differently we each encounter the world, which is why I'm so excited about shedding light on it. We used 55 different tasks, some of them questionnaires, some of them perception tasks, all available online. And we managed to reach a sample of nearly 40,000 people! We're still analysing the data, and we'll soon be putting all our data online openly accessible so that other researchers can use it to test their own hypotheses.

The interview has been edited for length and clarity.

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Further reading

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Manuscript received on May 27th, 2025.

Accepted on May 30th, 2025.



This is the English version of
Cásedas, L. (2025). Problemas de la conciencia (y cómo lidiar con ellos): Entrevista con Anil Seth. *Ciencia Cognitiva*, 19:2, 51-55.

