

# The mystery of consciousness

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## Thoughts from Antonio Damasio

What is consciousness, when did it evolve, how does it differ between people, and why do we need it in the first place? Philosophers have been asking questions like these for hundreds, if not thousands, of years. But now that science is catching up, we finally have the tools to start looking into the mind to find the answers.

In the realm of neuroscience and the study of consciousness, Antonio Damasio stands as a luminary who offers profound insights that have shaped our understanding of the human mind. His explorations study the intricate dance between the brain, the body, and the environment, proposing that consciousness is not a solitary experience but emerges from the dynamic interplay between different brain regions and their corresponding bodily states.

As the founder and director of the USC Brain and Creativity Institute, Damasio continues to push the boundaries of neuroscience. The institute collaborates across academic disciplines, harnessing the explosion of new knowledge in neuroscience, to further explore the biological origins of consciousness and the role of emotions in decision-making. Defining consciousness

Damasio begins his exploration by clarifying what consciousness is not and addressing the term's problematic aspects. He notes that in Romance languages, the word for 'conscience' serves dual purposes, denoting both consciousness and moral sense. This overlap is crucial as it implies that consciousness, as we perceive it, would not exist without a moral component. He points out that often when people try to explain consciousness they end up describing the mind with its sensory experiences, but they miss the essence of consciousness, which is fundamentally about the experience of being anchored in a specific organism – the body.

He believes that this anchoring is provided by homeostatic feelings, which include sensations such as hunger, thirst, pain, well-being, malaise, and desire. These feelings, distinct from emotions, endow us with a sense of self and a sense of being in a particular body at a specific time. The spontaneity of these feelings is critical in asserting the inextricable link between the mind and the organism, providing a direct reference to the body. This aspect, he argues, is essential to understanding consciousness.

## Understanding feelings

Damasio emphasises that feelings, much like consciousness, have long been enigmatic and often attributed solely to the brain – a notion he finds incorrect. Feelings cannot manifest without the body; they result from a hybrid process involving both the brain and body. Similarly, consciousness is not a mere function of the brain; it requires an integrated understanding of both bodies and brains.

One significant area of Damasio's current research involves interoception, which generates feelings. The physiology of interoception is distinctly different from exteroception, relating to perceiving the external world. These feelings are produced by neurons lacking myelin, operating through significant but non-synaptic contacts, and are structurally and operationally distinct from neurons responsible for external perception. He anticipates discovering key aspects of this hybrid process that unites the body and brain.

## The meaning of intelligence

Damasio also addresses the topic of artificial intelligence and its relation to human consciousness. He believes that consciousness without a body is unviable and that it is impossible for AI to replicate human consciousness truly. However,

he suggests it is possible to emulate certain features of our consciousness system, thereby creating a kind of simulacrum of feeling in robots. The most crucial feature to replicate, he argues, is vulnerability.

Addressing the purpose of consciousness, Damasio agrees that it allows us to make deliberate decisions about our actions. Before the advent of consciousness, creatures were unable to make autonomous decisions. This capability extends beyond humans to other creatures, indicating that consciousness is a widespread phenomenon with varying manifestations across species.

Ultimately, Damasio's exploration of consciousness reveals a complex interplay between the mind, body, and environment. His insights challenge us to rethink our understanding of consciousness and its role in our existence. As we continue to unravel the mysteries of the mind and consciousness, Damasio's work provides a crucial framework for future research and philosophical inquiry, paving the way for a deeper understanding of what it means to be conscious.

### More reading:

1. One of Damasio's earliest significant works, "Descartes' Error: Emotion, Reason, and the Human Brain", published in 1994, offers a groundbreaking perspective on the physiology of rational thought and decision-making. In this book, Damasio explores how these faculties might have evolved through Darwinian natural selection. He challenges the long-held beliefs about the separation of emotion and reason, positing that emotions are not just a part of our psychological makeup but fundamental to the very structure of rational thought. Damasio's hypothesis intertwines feelings, reason, and the body, suggesting a deep interconnectedness and marking a departure from traditional views that often compartmentalised these human experience elements.
2. Building on these ideas, Damasio's 1999 work, "The Feeling of What Happens", underscores his viewpoint on consciousness arising from interactions within and outside our bodies. He challenges the conventional notion of consciousness as a unitary, isolated phenomenon, thus redefining our understanding of the human mind and its connection to the physical world. In this transformative book, Damasio probes into the essence of the 'self' and the sensation of 'knowing' that accompanies conscious experiences. He introduces readers to the concept of the 'core self,' which emerges from the brain's continuous mapping of the body's states, crafting a narrative that is both scientifically rich and deeply humanistic. This exploration into the nature of consciousness not only sheds light on the biological roots of our inner experiences but also highlights the inseparability of our mental life from our embodied existence.
3. In his 2010 book, "Self Comes to Mind: Constructing the Conscious Brain", Damasio further explores the relationship between the brain and consciousness. He examines the intricate mechanisms by which the brain processes experiences and forms the seat of consciousness. Damasio highlights the critical role of emotions in social cognition and decision-making, positioning them not as barriers to rational thought but as integral components of our cognitive processes. In this insightful work, Damasio presents a detailed account of how our conscious minds are constructed, beginning from the simplest biological sensations to the most complex reflections. He dissects the layers of this construction, from the "proto self" to the conscious self, providing a comprehensive view of how consciousness emerges from the interplay of neuronal and psychological processes. Damasio's approach in this book extends our understanding of consciousness beyond mere neural activity, offering a holistic view of how our minds, with their rich emotional and cognitive tapestries, are an integral part of our biological existence.

## Thoughts from Anil Seth

In the expansive realm of neuroscience and the study of consciousness, Anil Seth stands out as a beacon of innovation and profound understanding. As a distinguished Professor of Cognitive and Computational Neuroscience at the University of Sussex and the Director of the Sussex Centre for Consciousness Science, Seth's mission to advance the science of consciousness has had a substantial impact on both academic and public understanding of this enigmatic topic. Seth approaches consciousness with a unique blend of scientific rigour and philosophical depth, with his views offering a fresh perspective on the age-old question of what consciousness truly is. His approach diverges from traditional beliefs that link consciousness solely to brain activity, language, or intelligence. As such, his work not only furthers scientific knowledge but also aims to benefit society, technology, and medicine.

### Consciousness beyond the brain

Seth emphasises that consciousness is not just about intellectual or linguistic abilities. It's a broader experience that encompasses even the most basic sensations, like pain or the perception of colour. These experiences don't necessarily require language or high-level intelligence. This view challenges the notion that consciousness is solely a product of complex mental processes and instead suggests that it's a fundamental aspect of our experience as living beings.

Central to Seth's exploration of consciousness is the idea of the brain as a predictive machine. He argues that the brain is constantly making predictions about sensory inputs to understand the world. This predictive process shapes our perception of reality, stretching beyond just interpreting external stimuli to include the very sense of self. Seth's perspective resonates with Buddhist philosophy, where the self is seen as an evolving experience and not a permanent, unchanging entity.

### The hard problem of consciousness

In addressing the famous 'hard problem of consciousness' posed by philosopher David Chalmers, Seth suggests that seeking a specific mechanism that transforms brain activity into conscious experience might be less effective than understanding and accepting consciousness as a natural part of our world. He compares this to the historical, scientific journey of understanding life, where the elusive 'spark of life' was never found, yet our comprehension of life's processes deepened immensely.

Seth's interpretation of consciousness ties it closely to life itself, countering the Cartesian view of animals as mere automatons. He proposes that consciousness arises from our status as living, flesh-and-blood creatures, rather than from some distinct, ethereal quality. This perspective situates consciousness firmly within the natural world, linking it to the fundamental properties of living organisms.

### Conscious experiences: body and mind interplay

Delving deeper, Seth explains that our experiences, including our sense of self, are the brain's predictions about the body. This includes not just external perceptions but also internal bodily states. He posits that every conscious experience, whether it's a perception of the external environment or an internal feeling, is grounded in these predictive processes, emphasising the deep interconnection between mind and body.

By situating consciousness within the broader context of life and biology, Seth offers a compelling narrative that blends scientific inquiry with philosophical insight. His work pushes us to rethink the conventional boundaries of consciousness, suggesting that it emerges not just from the neural activities in isolation but from a complex interplay involving our sensory experiences and physical existence.

### Implications and future directions

The implications of Seth's work are far-reaching. By understanding consciousness as an integrated experience that involves the entire organism, his research opens new avenues in neuroscience, psychology, and even artificial intelligence. It challenges us to reconsider not just how we define consciousness but also how we relate to other conscious beings, both human and non-human.

As we continue to explore the mysteries of the mind and its connection to consciousness, Seth's insights offer a crucial framework for future research and philosophical inquiry. His approach provides a path towards a deeper understanding of what it means to be conscious and underscores the importance of considering consciousness in both scientific and ethical dimensions. This comprehensive view of consciousness has the potential to influence how we develop technology, address medical challenges, and understand our place in the natural world.

**More reading:**

- In his 2014 book, "30-Second Brain", Seth offers a quick and engaging guide to understanding the brain's complexities. This book condenses the 50 most mind-blowing theories in neuroscience into concise, 30-second explanations, accompanied by engaging visuals. Ideal for those who want to grasp the essentials of brain science without getting bogged down in details, it's an informative read that brings clarity to complex topics, making it accessible to anyone curious about how our grey matter works.
- The 2015 book "Brain Twist" by Clive Gifford (with Seth as consultant) presents a fascinating blend of brain games, mind tricks, and neuroscience information. Although it is aimed at younger readers, it remains engaging for all ages. "Brain Twist" offers insights into how our senses and brain work together to create perception wrapped in a fun and interactive format. It's an adventurous journey through the mysteries of the mind, making complex scientific concepts both understandable and enjoyable.
- Seth's 2021 book, "Being You: A New Science of Consciousness" embarks on an exhilarating exploration of what it means to be conscious. Recognised by The Economist and The Guardian as one of the best books of that year, "Being You" invites readers to reconsider their understanding of the self. Seth's narrative combines the latest findings in neuroscience with thought-provoking insights, leading to a profound re-evaluation of how we perceive ourselves and the world around us. Hailed as inspirational and transformative, this book is a must-read for anyone interested in the frontiers of cognitive science.