

Over the centuries, science has dislodged some long-held beliefs about our humanness and our place in the cosmos.

Will science now take away our souls?

Exploring the history of the "soul" is a bumpy ride through science, philosophy, art, literature, religion, spirituality, and lots of -isms. Belief about the soul mines the depths of "self" and "other," mortality and eternal life, and speculation and the certainty of uncertainty.

Evidence from antiquity reveals that the earliest humans believed in something beyond themselves, a force outside of and distinct from the body. It's one of the most primal and enduring beliefs of humankind, and throughout the ages, the greatest minds have grappled with the same fundamental questions: What is it that makes us human? What is the "I" in I? And is the soul separate from the body?

Over the centuries, science has dislodged some long-held beliefs about our humanness and our place in the cosmos. For instance, astronomers displaced us from our heady position at the center of the Universe — and didn't

even let us keep center stage in our own solar system. NASA engineers made it possible for us to see our seemingly vast planet as small enough to fit in a single photograph, no bigger than a blue marble in an infinite ocean of stars. Darwin and his theory of biological evolution stripped away our divine origins and placed us alongside the other creatures of the earth. Will science now take away our souls?

What we call the "soul," scientists call "consciousness," and many believe that it is brain science that has the best shot at understanding the true nature of the soul or, more importantly, if it even exists. Consciousness has long been believed to lie in the brain, and we now have amazing tools to peek into brain activity — PET, EEG, fMRI, Optical Imaging, MEG and others.

Are we close to solving the mystery of the soul and its relationship to the body?

We don't necessarily need philosophers or science to tell us where our self-identity or consciousness resides.

THE SOUL/BODY CONUNDRUM

The great minds of the millennia have offered varying theories of the role of the soul and its dependence on the body. Homer was the first to introduce the concept of a soul or a spirit that lives on after death. By the time of the ancient Greek philosophers, "soul" had taken root in the lexicon as the distinguishing characteristic of living things. (Lorenz, 2009)

Plato saw the "soul" as a separate, immortal entity that existed before entering the body and continued on its journey afterwards. On the other hand, Aristotle believed the soul developed over the course of a lifetime, emerging as the complete actualization of a living thing. Consequently, in his view, the soul dies along with the "mortal coil," as Shakespeare called it. St. Augustine, one of Christianity's earliest theologians, shared Plato's belief in the immortality of the soul, describing it as "a special substance, endowed with reason, adapted to rule the body." (Russell, 2010)

We don't necessarily need philosophers or science to tell us where our self identity or consciousness resides. We already know from collective experience that we can lose many parts of our bodies without losing the essence of who we are. Doctors can pluck out tonsils, spleens, ovaries and prostates; we can lose limbs, sight and hearing; vital organs can be taken from one body and transplanted into another without destroying our identity.

The late Stephen Hawking, the revolutionary, Nobel Prize-winning physicist, best exemplified the extraneous nature of the physical body. He continued to excel intellectually even as disease slowly chipped away at his body. Near the end of his life, he was reduced to using a single cheek muscle to communicate. Just weeks before his death, he completed his final theory of the cosmos, challenging the modern theories of an expanding universe. Through determination and the help of technology, he continued to be the quintessential and brilliant Stephen Hawking.

Oleh Slobodeniuk

WHO HAS A SOUL?

The Theist and Abrahamic religions (Christianity, Judaism and Islam, among others) believe that humans are the higher beings on Earth, the sole owners of souls. St. Augustine spoke of this human dominion over nature, where humans are the only "rational creatures" as opposed to "brute animals."

On the other end of the spectrum, biocentrism suggests that all living beings are on the same footing, so to speak. English naturalist Charles Darwin sparked this line of thought in the 1800s with his theory of evolution. Darwin, in effect, took away human divinity,

toppling humans from a lofty place of supernatural origin and relegating us to a more terrestrial branch in the biological tree. (Darwin, 1838)

Similarly, many Indian religions (Buddhism, Hinduism and Sikhism, among others) believe humans are not the only ones endowed with a soul. Some believe that humans and animals are not equal, but that some animals are actually higher than humans. Jainists, meanwhile, value the life of all creatures to such an extreme that they go to great pains to avoid stepping on the smallest of insects.

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SCIENCE OF THE SOUL: THE KNOWN AND THE UNKNOWN

There is a great space between what we know about consciousness and what we don't. In all the exploration of the nature of consciousness, all the new tools at hand, the soul has remained a mystery.

Renowned scientist Francis Crick, co-discoverer of the molecular structure of DNA, doesn't find it mysterious at all. He states with soul-killing bluntness in his book *The Astonishing Hypothesis* that everything we think of as our identity, our joys and sorrow, memories and ambition, even our free will, are "no more than the behavior of a vast assembly of nerve cells and their associated molecules." (Crick, 1995)

Sam Harris, a contemporary neuroscientist, philosopher and author, agrees with Crick that "living" is a process running in our bodies, and when we die, that process ends. However, he talks about that space between the known and the unknown in gentler, more poetic terms. (Harris, 2014)

"While we know many things about ourselves in anatomical, physiological and evolutionary terms, we do not know why it is we are what we are," Harris says. "The fact that the Universe is illuminated where you stand — that your thoughts and moods and sensations have a qualitative character — is a mystery, exceeded only by the mystery that there should be something rather than nothing in this universe."

British psychiatrist and author lain McGilchrist ponders eloquently about the nature of humanness in a lecture titled What Happened to the Soul? (McGilchrist, 2014) He asks whether the concept of the soul is redundant now that "science has made us see it as a superstition," or are we missing something because we've been unable to apply the scientific method to the soul. In deliberating what the soul might be and what it is not, he weighs morality, philosophy, religion, science and literature, concluding with a quote from American philosopher Eugene Gendlin: "We think more than we can say. We feel more than we can think. We live more than we can feel. And there's much else besides."

"And perhaps," McGilchrist concludes, "the soul is what we mean when we reflect on that 'much else besides."



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