

Can Science Account For the Soul?

The Rev. Edmund Robinson
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A little over ten years ago, I had a close brush with death. We never found out what caused it, but for some reason I had bleeding in my brain, what is called a subdural hematoma. I was very fortunate that it did not lead to a stroke or seizure, but I had to have two surgeries to get the blood out and ever afterwards I have worn a titanium plate on top of my skull.

I got superb care at Brigham and Women's Hospital in Boston and one of my neurosurgeons was the daughter-in-law of my esteemed colleague and mentor, Rev. Carl Scovel. A couple of weeks after the second surgery, I was meeting with her and she was going over my condition. On her computer screen I saw, for the first time in my life, an image of my own brain, and being a minister, I could not restrain myself from asking, "Doctor, where in this picture is my soul?" She sort of chuckled and went on, ignoring my impertinent question.

It was impertinent, for she was dealing with matters of my own life and death. My whole ability to live and work for the last ten years was due to her medical knowledge and skill, based on science. And what does science have to do with the soul?

Fundamentally, science is an objective enterprise. It asks for empirical evidence, for tests that can be performed by other laboratories and results that can be replicated and published and criticized in peer-reviewed publications. It is a social enterprise. For a scientific theory to be proven, the results must be the same whether the tests are done in Boston or Bombay. So science is an objective way of looking at the world.

The soul on the other hand, is the essence of subjectivity. It is the residence of all that is personal and unique, all that makes me me and you you. (In fact, considered one way you are all a bunch of you yours.)

Some of us like to believe in miracles, like turning water into wine or walking on water or making the sun stand still. I find it miraculous that that brain I saw on the computer screen that day somehow contains the lyrics to about a dozen Bob Dylan songs, and maybe as many Winnie the Pooh poems and memories of my fortieth birthday party and what I had for dinner last night. Right now, that lump of gray matter is generating these words I'm speaking *and* my sense of being here speaking them, which involves my relationship with each of you down through the years we have been together.

You could call it a miracle that all that fits within this lump of matter, but it does not violate any laws of nature, so maybe it is more accurate to call it a mystery. Science has not yet provided an account of how the richness of our conscious experience is generated from the wiring circuits in our brains, how cold matter creates a warm soul.

Is this important? These questions of the soul might seem to some of you an abstract parlor game of no consequence to any real issues that real people worry about. I think they are deadly serious issues; the question of who has a soul comes up in dozens of ways. It determines what beings you can kill, and eat. It determines when you might terminate a pregnancy or pull the plug on a loved one with a terminal condition. It can affect your interaction with a loved one

with dementia; I speak as a person whose mother, her mother and all of her siblings succumbed to Alzheimer's in their eighties, and I expect that unless a cure is found I will suffer the same fate in a couple of decades. It also affects the way we deal with computers and artificial intelligence which are multiplying exponentially in our world.

The way of knowing we call science has roots in the ancient world, but really came into its own in the seventeenth and eighteenth centuries, in the period we call the Enlightenment. It is not a coincidence that the same era gave birth to the two constituent movements of the faith we practice, Unitarianism and Universalism.

Rene Descartes was a philosopher and scientist of the Enlightenment. He asked the question, using only reason as a given, but without any input from the five senses, what can we know? And he came up with the famous saying, "I think therefore I am." I can't be sure I know anything except this subjective experience that I'm in here thinking.

Descartes's maxim amounts to saying, "at least I know this. Thought exists, because I know I'm thinking it. And if this thought of mine exists, I must exist. And this would hold true even if the thought were a doubt. I could doubt that you exist or God exists or even that I exist, but those would all be thoughts which need to have a thinker, and therefore I, as the thinker, exist."

Descartes is the focus of much scientific interest in the religion and science field because he insisted that the part that did the thinking was not part of the matter. The body was flesh, material. The mind was something else. This is what we call Cartesian dualism.

But modern science does not have any use for dualism. Science insists on materialism. The world is composed of one kind of stuff. There isn't body stuff over here and soul-stuff over there. It is all one kind of stuff. But then where does this thing I call Edmund come from?

At this point it might be good to discuss the terms I'm throwing about. We often use the terms "soul" and "spirit" interchangeably, but they were originally two quite distinct terms. "Spirit" in Latin and Greek is close to the words for breath. It is the quality that a living being has that a dead being doesn't. It is particular and vital. "Soul," by contrast, is an abstract essence, like the other ideal entities in Plato's philosophy – the circle I can draw is an imperfect copy of an ideal circles which is eternal unchanging and more real than the one I draw. The soul of a person is somehow outside of that person's history and personality and might survive death. Immortality of the soul is a live topic; immortality of the spirit is a contradiction in terms.

Western philosophy for more than two thousand years has been based on Plato, but now is moving away from the idea that things have abstract essences or that anything is eternal. Yet Christianity remains in thrall to Plato's ideas.

Both terms have their origins in religion and philosophy. Two other terms are more congenial to a scientific world view: "self" and "consciousness." "Self" is the idea we generate of who we are; it may not correspond to anything real or to the same thing each time we use the term, but it does mean something. "Consciousness" is the awareness that lights up when I wake up in the morning and fades away when I go to sleep. A lot of what goes on in my brain, whether asleep or awake, is outside the circle of that awareness, but there is a field of sensations, thoughts and feelings of which I am aware.

Now let me tell you about one scientist who wasn't reluctant to bring the soul into his laboratory. A physician named Duncan MacDougall in Haverill, Massachusetts conducted

experiments in 1907 to see if a person's body would change in weight after the person's death. He set up a hospital bed on a sensitive scale, and he used in the deaths of six or seven patients. He had a couple of results suggesting that the body lost about three-quarters of an ounce at death. But the sample was very small for scientific reasoning and his experiments provoked great public controversy at the time.

Most cognitive scientists today would consider MacDougall's efforts naive; whatever the soul is, it isn't material, it wouldn't weigh anything. But of course it is the essence of good science not to take anything for granted.

We can get some perspective on our own souls by considering whether souls exist in things other than humans – in animals, in zombies and in machines. You might say that to this point I've been putting Descartes before the horse.

I have long had an interest in these questions, but what rekindled that interest was an article in the New Yorker¹ a few weeks ago titled "A Science of the Soul." The article was focused on Daniel Dennett, a philosopher at Tufts, who has written many books trying to give a scientific account of human consciousness. The article described a recent conference on animal consciousness.

Animals occupy this kind of twilight zone; we can't tell from the outside whether they have anything like the kind of conscious life humans have. Later in that last session of the conference, Daniel Dennett offered this on animal consciousness, starting with a reference to the philosopher of language Ludwig Wittgenstein:

"Wittgenstein...famously wrote, 'If a lion could talk, we couldn't understand him.' [Dennett disagrees] But no! If a lion could talk, we'd understand him just fine. He just wouldn't help us understand anything about lions.'

"'Because he wouldn't be a lion,' another researcher said.

"'Right,' Dennett replied. 'He would be so different from regular lions that he wouldn't tell us what it's like to be a lion.'"

This exchange points up a profound truth about human consciousness. We have language, other animals don't. Other animals live in an external world of sensory stimuli – smells, sounds, sights – out of which they have to figure out two very basic daily things – how to get lunch and how to avoid being lunch. We live in that external world, too, but we mediate it through our words and concepts. Words are deeply embedded in our emotional lives, so that we cannot imagine what it would be like to live in a world without words or concepts.

Consideration of animal consciousness brings up the zombie problem. Here's the New Yorker article again:

"The experts [at the conference on animal consciousness] found themselves circling a familiar puzzle known as the 'zombie problem.' Suppose that you're a scientist studying octopuses. How would you know whether an octopus is conscious? It interacts with you, responds to its environment, and evidently pursues goals, but a nonconscious robot could also do those things. The problem is that there is no way to observe consciousness directly. From the outside, it's possible to imagine that the octopus is a 'zombie' – physically alive but mentally

¹"A Science Of the Soul" by Joshua Rothman, the New Yorker, March 27, 2017

empty, and, in theory the same could be true of any apparently conscious being.”
[p.48]

Of course, animals exist in the real world, while zombies exist only in the imaginations of the writers of horror novels and movies.

But the zombie teaches us something: it is horrifying precisely because we do have an instinct for perceiving souls in other humans. You will not seriously think Edmund has been replaced by a zombie because you have a sense of Edmund and because just now Edmund is behaving in accordance with how you expect me to behave. If you encountered me in twenty years with advanced dementia, a lot of what makes me me right now would be gone, but you would still not think I was a zombie, only that I had succumbed to that familiar condition.

Let's look briefly at robots, at artificial intelligence. The gold standard in artificial intelligence is the Turing test, named after the British computer scientist Alan Turing, and the test is this: can a machine be invented which will fool a human into thinking she is conversing with another human if the human is allowed to ask as many questions as she wishes.

The Turing test is based on a profound insight into our relations with our fellow humans. We have evolved brain circuits for facial recognition and voice recognition because we are social animals and it is vital for us to know who we are dealing with socially. Conversation allows us to size up the mind of the person we're dealing with.

Well I happen to have a robot in my pocket as do many of you – let's try the Turing test right here. This is not a real test because I already know that I'm dealing with a machine, but the people who programmed this machine were very smart and put in a lot of things to make it seem sociable.

[interacts with Siri on the iPhone, asking questions such as the meaning of life, whether there is a God, whether Siri has a soul, all of which Siri ducks cheerfully]

What is apparent is that whoever programmed Siri was not intending for her to pass the Turing test, but rather to interact comfortably and efficiently with the owner of the iPhone to get information the owner wants. After all, I don't really need her to convince me that she's human; all I need is for her to find the restaurant or route I'm looking for.

But we do the Turing test all the time in our modern life. If you have to contact any kind of bureaucracy on the telephone, or, God help you, call for tech support with one of your devices, the chances of you getting a live human being on the first try are about nil. You will get a computer-generated voice which will ask you a bunch of questions to which you have to respond by saying the answers or touching a number on your phone. Only if the computer can't help you will it let you get to a real live human being, but as soon as that human being answers the phone, you have no doubt you are talking to a person. We are used to this, it doesn't seem any kind of wonder, and yet it is wonderful that we have this innate ability to recognize and relate to another person even if it's a computer tech person in India.

So we have animals, zombies, robots telling us something about what the soul is not, but not directly about how we get the souls we get, much less how they might be generated from our brains.

The short answer to the question I posed in the title of this sermon is no, science can't yet account for the soul, or consciousness or a sense of self. Daniel Dennett thinks he explained consciousness in his 1991 book, *Consciousness Explained*, but other cognitive scientists say he

merely explained it away.

I don't know how, but I have a couple of clues. One is the concept of emergent properties.

If we looked inside a human brain, we would see lots of neurons arrayed in circuits. None of them would be the self or soul. What we call consciousness, the experience of being alive and aware comes from the total interaction of all these circuits. But we know that what we are conscious of is only a small fraction of the neural activity of the brain.

Each of the circuits individually may be a zombie; the circuits evolve functions over our lifetimes, and we have circuits that tell us to stand up and how to do it and how to sit down and how to turn a doorknob. We are barely aware of doing those lower-order activities as we are doing them.

There is a principle in science called emergence. When you have a system composed of parts, often the properties of the system are greater than the properties of the parts if the system. We commonly describe say, the stock market as having intention and feelings and fears because its individual actors have those. A slime mold such as you might have at this moment in the vegetable bin in your refrigerator consists of lots of little one-celled animals, but together they can behave like a single being. An anthill, a traffic pattern in a city, all are examples of emergence. So it is still a mystery as to how this aggregation of basically stupid and mechanical brain circuits creates the glorious theater of the mind with all its rich connections, but I suspect it has something to do with emergence: consciousness is an emergent property of the brain. But I am not sure that this statement actually explains anything at all.

Then there is the question of the self. One of the things we humans do with our word-besotted minds which, as far as we know, other animals don't do, is to tell stories. We are always telling stories, rehearsing our history and planning the future and locating ourselves in a web of meaning. I think the self is what we create in order to have a character for our stories. We may tell ourselves "once upon a time there was a man who thought he was smarter than anyone else," or "once upon a time there was a woman who never seemed to be able to get where she thought she deserved to be in life." Whatever the narrative we spin, we spin this thing called a self to fit in it. And we can all see from the two examples I just gave how the fitting into that narrative determines how we feel about ourselves. And we know that through therapy or spiritual direction we can change the narrative.

There is a Buddhist doctrine called annata, or non-self; this is the idea that we actually don't have permanent selves, but we choose to put on one self or another every morning as we would choose our wardrobe. Of course it is not easy to put on a completely new self, and the default is that we will continue with the set of reflexes and assumptions which we have carried with us to this point.

The Buddhist point of view is very helpful for it allows us to see selves as a social construct, not something which is given by the nature of matter. We have a lot of wiggle room in how we construct ourselves and in that is the basis for overcoming the downward spirals we sometimes get trapped in.

And that brings us back to the animals. So far as we know, other animals do not imagine situations contrary to fact. They cannot lie or dream or make up their minds to lose weight or find hope or happiness. We have all those capacities because we are somehow endowed with

this word-embedded ability.

We come, in the end, to the simple answer: no, science can't account completely for the soul. For the soul, or spirit, or consciousness, or self, is perpetually generating new possibilities, new thoughts, feelings, insights, new combinations of neural circuits which could not be determined, foreseen or bounded by what has gone before. This is what we might call freedom. If we do not live in a billiard ball universe, it is because this remarkable piece of matter which lies between our ears refuses to be pinned down on the lab table for complete explanation. Amen.

Reading

Some Questions You Might Ask

Is the soul solid, like iron?
Or is it tender and breakable, like
the wings of a moth in the beak of the owl?
Who has it, and who doesn't?
I keep looking around me.
The face of the moose is as sad
as the face of Jesus.
The swan opens her white wings slowly.
In the fall, the black bear carries leaves into the darkness.
One question leads to another.
Does it have a shape? Like an iceberg?
Like the eye of a hummingbird?
Does it have one lung, like the snake and the scallop?
Why should I have it, and not the anteater
who loves her children?
Why should I have it, and not the camel?
Come to think of it, what about the maple trees?
What about the blue iris?
What about all the little stones, sitting alone in the moonlight?
What about roses, and lemons, and their shining leaves?
What about the grass?

Mary Oliver