

The Soul & the Machine: can the “Terminator” movie really happen?

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In the recently released fourth installment of the *Terminator* movie series, we see the continuing development and aftermath of a world taken over by robots. In these movies, research in artificial intelligence advances to the point where these machines become “self-aware,” and as any good antagonist should behave in a blockbuster film, they immediately begin destroying all human life. Yet, there is something still unique about humans that allow a few stragglers to survive and organize a resistance movement to defend themselves from extinction. This concept is not new; similar story lines have appeared in classic movies such as “2001, A Space Odyssey,” “The Borg” from Star Trek, or more recently “I, Robot.” We have this odd juxtaposition of having great faith in science and progress, yet also suspect it will be our ultimate undoing.

Movies like these cannot help but cause people to ask certain questions: Could things really turn out like this? How realistic is this vision of the future? Will robotics advance to the point where machines become thinking, self-aware beings? Given the break-neck advancement of technology, the idea of conscious computers doesn’t really seem all that far-fetched and may in fact seem like an unavoidable development. But is this really the case, and how should we as Christians think about and respond to such issues?

The issue of artificial intelligence crosses multiple disciplines ranging from neuroscience to theology to the philosophy of mind. Regardless of which discipline is weighing in, it is obvious that there is a central underlying question concerning the nature of the brain and the mind. How does the brain function? Is the mind different than the brain? And if so, what kind of a thing is the mind?

To begin, I’d like to summarize the three main opinions on this issue.¹ The first group would be those who hold to a purely materialist view of the world. In this view, because physical matter is all there is, the brain must therefore be a purely material kind of thing. There is no separate “mind” in play here; it is simply the result of a complex, highly organized set of neurons, synapses, and other anatomical features of the brain. The brain, and humans in general, can ultimately be explained (and thus “reduced”) through talking about physics and chemistry. Those in the materialist camp have no problem in assuming that artificial intelligence will eventually develop. Since we as humans are the result of a materialistic evolutionary process, there is no reason to doubt that we can essentially duplicate the process that gave rise to us. Eventually we will mimic the structure of the brain well enough to reproduce its behavior on a silicon-based chip.

¹ I owe these categories to an article by Michael Dodds, “Hylomorphism and Human Wholeness: Perspectives on the Mind-Brain Problem,” *Theology and Science*, ed. Ted Peters, (Abingdon UK, May 2009) 148-151.

The second opinion concerning this issue is what I would call the “emergence” camp. Those who hold this view believe that the mind is in fact something distinct from the brain, but that the mind is dependent on the brain. The mind somehow “emerges” as a result of the brain’s development. This group believes minds something greater than the sum of its parts. They recognize the psychological aspect of the mind as something more than just grey matter in such-and-such configuration. However, they typically believe that the mind and brain are forever intertwined; meaning that when one’s brain dies, the mind dies with it. Like materialists, the emergence view would not typically have an issue with the concept of machines becoming self-aware.

The final option is the “dualist” camp. The Christian view has traditionally fallen into this camp, though Christians are not the only ones who hold this belief. In the dualist view, one’s mind (or soul, depending on a more technical discussion of terms) ²is separate from one’s brain and therefore lives on after the body dies. Somehow the soul/mind interacts with the brain to produce physical effects. Dualists see the problems caused by a materialist view as being so great that they can only be solved by proposing a non-physical thing called the mind/soul. As a result of this view, the idea of a Terminator becoming self-aware is a logical fallacy called a category mistake: consciousness is not an issue of a difference of *degree*, but an issue of difference of *kind*. The mind and brain are *different kinds of things*. So different, in fact, that one can’t turn into the other. Therefore a computer, which may be considered analogous to a physical brain, can never develop a mind.

As you might imagine, each of these three options has its share of advantages and hurdles to overcome and it may be that we haven’t even come close to framing the question in the right way. Scientific discovery may in the future take us in an entirely new direction. But, given what we now know – or perhaps we should say what we do *not* know - there are several reasons to believe that the dualist option is the most rational one to hold, and as such lends support to a Christian worldview. This evidence takes the form of what our best scientists recognize as “mysteries” that cannot be accounted for by the materialist or the emergence views.

1) The Mystery of First-Person Experience

We all experience the world around us through our senses. We have a first-person description of “what it is like to” eat an apple or smell a rose. This is a very difficult thing for a neurologist to explain. You could be the world’s most knowledgeable neurosurgeon, able to explain in the most intricate detail what occurs when the eyeball receives light signals from the color red. But if that neurosurgeon was color-blind, they would never be able to experience *what it is like* to see red. I would like you to attempt an experiment to help illustrate this: stand in front of a mirror and think very hard about the color blue. A blue sky may come to mind or a

² The terms “mind” and “soul” are somewhat interchangeable. Some use the term “soul” as the foundational element of a person, or what gives life, whereas “mind” is often used as the mental faculty of the soul. But for our purposes here they can be thought of as the same basis concept.

juicy blueberry. Now look in the mirror and see if any blobs of blue are oozing out of your ears. No? Let's imagine you were able to slice open your brain while thinking these thoughts, do you think (no pun intended) you'd see anything blue inside your head? Of course not. That is because these experiences are a *different kind of thing* than the physics that describes them. So while a neuroscientist might be able to describe how a blue light frequency reacts with the chemistry of your brain, it's not the same thing as experiencing it.

What these examples show is that our first-person experiences seem to be something other than merely physical events. We are unable to provide any empirical data on the question of "What is it like" except for simply asking the person, "What is it like?!! There is a subjective side to this issue that doesn't show up on any CAT Scan. A dualist approach would seem to fit the facts in this case as it provides an explanation for both the physical world as well as our experience of the world.

2) The Mystery of Consciousness

First-person experiences are but one issue related to a deeper problem, that of consciousness. Just what is consciousness? Can you inspect it through a microscope? How much does it weigh? Neuroscientist David Eagleman has called consciousness "one of the major unsolved problems of modern science." He goes on to say "If I give you all the Tinkertoys in the world and tell you to hook them up so that they form a conscious machine, good luck. We don't have a theory yet of how to do this; we don't even know what the theory would look like."³ Another neuroscientist, Mario Beauregard, has stated that "No single brain area is active when we are conscious and idle when we are not. Nor does a specific level of activity in neurons signify that we are conscious. Nor is there a chemistry in neurons that always indicates consciousness."⁴ In other words, consciousness cannot be observed. A materialist would have to conclude that there is no scientific evidence for it! Perhaps what makes us self-aware is something entirely different? When we think abstract thoughts, or solve a math problem, or recall a fond memory from years ago, we can see where each of these acts takes place in the brain. However, there does not seem to be a physiological source for the act of being aware of the fact that we are performing such acts. In other words, adding 2 plus 2 together lights up a specific part of the brain, but being aware that I am adding two plus two together does not. Consciousness is not something to be poked or prodded within the grey matter between our ears.

3) The Mystery of Free Will

A chilling result of the materialist view is the elimination of our concept of free will. A materialist must explain all current brain states in light of prior brain states. Like a series of billiard balls following the laws of physics, the brain is merely a product of its present environment and its prior states of being. Where does this leave "the will"? Morality? Ethics?

³ David Eagleman, "10 Unsolved Mysteries of the Brain," *Discover Magazine*, August 2007, 75.

⁴ Mario Beauregard, *The Spiritual Brain* (New York: Harper Collins, 2007) 109.

Justice? They cannot exist in this mechanistic cause and effect continuum. But if none of these concepts exist, why do we all have a sense of what they are? Wouldn't we all agree that there are some things that shouldn't be done no matter what, like torturing babies for pleasure? How could you say this was wrong without the ability to choose otherwise? There is a reason we use the phrase "heartless" to describe someone without compassion. But in the materialist view, all human beings are really no different than a Terminator who does not think or feel, but merely follows preset programming. If this were the case, then we could not hold anyone accountable for their decisions. And yet, we do hold people accountable for their actions. Why? Because we nearly universally believe that human beings do have a free will. The dualist view of the mind/brain question best explains this belief in a free will and the experiences which give rise to that belief.

4. The Mystery of Mental Images

There is some empirical evidence that suggests something more is going on in the brain than can be explained through physics and chemistry. Traditionally, science has tended to construct theories from the "bottom-up." This means we use the parts to explain the whole, such as describing planetary motion through the collective forces of gravity on individual particles. But in the cognitive sciences, something else appears to be going on that is better explained through "top-down" thinking, in which the whole is used to explain the parts. For instance, some brain studies suggest that "forming a mental image comes first and is reliably followed by changes in patterns in brain activity."⁵ Thus the whole (here the mental image) does not arise from the parts (the brain activities) but rather the whole gives rise to the parts. An example would be the well-known, yet often overlooked, phenomenon known as the *placebo effect*. This is the phenomenon of a patient with the mental belief that they are being treated for an illness, actually experiencing the positive benefits of that treatment even though they were only being given a benign sugar pill. This continues to baffle materialists because, according to that view, changes in mental images (i.e. beliefs) should arise from changes in the brain state, but not vice versa.

5. Other Mysteries

There have also been numerous studies on people's near-death experiences that suggest something beyond the physical realm is at play. These includes cases where people report seeing objects/events in their immediate surroundings while in deep comas or considered clinically dead; observations that could only have occurred while they were unconscious. These and other

⁵ Michael Dodds, "Hylomorphism and Human Wholeness: Perspectives on the Mind-Brain Problem," *Theology and Science*, ed. Ted Peters, (Abingdon UK, 2009) 148-151.

lines of evidence, I would suggest, point to an intelligent whole, rather than a collection of parts, responsible for life as we know it.⁶

These are just a few of the unsolved mysteries in the science of the brain. I won't try to presume that assuming the existence of a soul solves all of them (it even creates a few problems of its own), but allowing for a non-material explanation for our experience of the world seems like a reasonable thing to do, given the data.

As a Christian, I believe in the existence of a non-material side of my being, my soul. In the Old Testament, God is frequently described as breathing life into creatures. The word most often used here is the Hebrew word *nephesh*, which carries with it the idea of a life force or spirit, our source of identity. It is also what makes us alive. For example, we see this word often translated as "soul" as in passages including Gen 35:18, 1 Kings 17:21-22, or Ps 16:10. The central connotation here is "the continuing locus of personal identity that departs to the afterlife as the last breath ceases."⁷ In philosophical terms, the concept of identity is important. Our soul is what makes us who we are, it is a necessary component of what it means to be "Me." Things like bodies are merely transient and change over time, but the soul remains. So in effect, it would be accurate to say, "I am my soul. I have a body." This is an important distinction, for the soul lives on after the body dies. My body appears to not be necessary for me to exist, though it is a key feature in what it means to be human.⁸ Of course, God may decide in the future to breathe life into a robot.... I suppose it's possible. But this would require God to create a new thing. Robots will never gain minds by us fiddling around with neural Tinkertoys.

So can the Terminator scenario really happen? I seriously doubt it. I do not think it's merely a matter of time and faster CPU's or bigger hard drives. It's an issue of *kind*, not of *degree*. We are in essence immaterial beings who operate in the world through physical bodies. Arnold Schwarzenegger (most likely) has a soul, but it wasn't created in Hollywood or through software developers, it was from a loving God who created all that is seen and unseen.

⁶ For more on this subject, read Mario Beauregard's fascinating book, *The Spiritual Brain* (New York: Harper Collins, 2007). Also Dr. Michael Sabom, *Light and Death* (Grand Rapids: Zondervan, 1998) who is a cardiologist who has studied near-death experiences extensively.

⁷ J.P. Moreland, *Body and Soul* (Downer's Grove: IVP, 2000) 28.

⁸ God made humans with bodies in order for us to carry out our task of representing Him/manifesting His presence in the physical creation, and he will restore believers to physical bodies (though transformed ones) at the 2nd Coming of Jesus.