

PHI315 : Lesson Plan on Life in Relation to AI and AL

Today we speak on life. I really think we should have a class in the philosophy department in regard to this question: but what is life? I do not here refer to human life only, such as in questions that ponder the meaning of life. This is not an existentialism. No, this is a metaphysics, it is a metaphysical question as to what life is.

As always, let us begin with the following question open to all: what is life?

I think it is fair to say that we differentiate between what is alive, and what is not alive. But the way we differentiate, the how, which lines the cuts are made along, that has changed over time, and today even it is an open question. I would like to first dispense with something.

The science today, biology, is supposed to study life. We query various resources and we find the following determinations:

1. "Life is a quality that distinguishes matter that has biological processes, such as signaling and self-sustaining processes, from matter that does not, and is defined by the capacity for growth, reaction to stimuli, metabolism, energy transformation, and reproduction."
2. "Life is defined as any system capable of performing functions such as eating, metabolizing, excreting, breathing, moving, growing, reproducing, and responding to external stimuli."
3. "A self-sustaining chemical system capable of Darwinian evolution"

So we see presuppositions pertaining to materiality, though not always, these notions that processes or functions are necessary such as metabolism or reproduction, a reference to chemical systems and evolution. But these definitions, determinations, what ever they are, they are insufficient. They neither explain the origin, the meaning, or the reason behind such articulation.

On 1, an organism no longer capable of growth, whose reaction to stimuli is extinguished either internally or externally, that has a metabolism but is barely there, and that no longer can reproduce, would not alive. Are the terms inclusive or exclusive? How many are needed? And why does materiality have to come in to the picture? Can there be abstract organism, one instantiated mentally? Are ear worms organisms? Cognitive parasites, infohazards?

Same holds for two, why must functions be crucial? Which functions and why them and not others? Three as well, what if there was non darwinian evolution? What if a life form has a set genetic code and does not evolve over time?

These definitions are exactly that—attempts to articulate something after the fact. We call certain things alive, and attempt to justify why so. Some people decide that the earth is itself alive, as an organism, and attempt to come up with a concept of life that fits that. This is understandable in a sense.

Historically, the notion of life has been complicated. Ancients saw the cosmos as alive. The Greeks thought that the Void gave birth to Earth and Earth gave birth to Sky, Earth and Sky together gave birth to Day, Night, and so on. The

whole universe was, for the Greeks alive, at the very least the natural world. You find in Antiquity myths of statues coming alive, there is the story of Pygmalion who made a statue of a woman that came alive and married him. The boundary between alive and not was blurred, permeable. Death of a person was not death, there was already the theory of metempsychosis or a kind of transference of soul. We see this in the East as well, Eastern philosophy often holds views where life is an activity of process that is merely transformed, and that all in the cosmos partakes in that.

In times of science emerging, I am here thinking 1700s, life became a question because the idea of empirically classifying it became a thing. Minerals used to count as life, just a very simple one. Life was any kind of growth, change over time, and they ranked it on a complexity scale, minerals being simplest, and humans most complex. Then Darwin came onto the scene, and the classifications changed, minerals no longer counted. The idea of bacteria and viruses came to be. Bacteria, today, are counted as alive. Viruses are not. They say viruses are incapable of self sustenance or it is not growing, or it is this or that. But a virus is a reaction that propagates and changes over time, viruses mutate too, and they do appear. They say viruses do not grow, but does that not depend on definition of growth? Are viruses magically replicated in full and their shape never changes? No of course not.

This brings us to fundamental question, what makes something alive? It is ambiguous, we do not always agree on what counts as life, but I would be willing to bet that it is revealed in speech. We say of covid, for example, that it mutates, that it is spreading, that it acts in such and such a way. We do not speak differently, in practice, about bacteria on the one hand and viruses on the other. So why differentiate in determination and definition? There is no answer to this question, as to what counts as alive and what does not. It is in flux.

Now, I want to discourse a bit on computers and artificial life. There is a concept called a Quine, named after an influential philosopher W.V. Quine who was, by the way, from Akron, Ohio. That town does not get enough mention, but he was from there. That being said, a Quine is a program that outputs its own source code. I have written such programs, and computer viruses can be thought of as Quines. Say you have a program that does only one thing, it makes a new program with the exact same code it has, and executes it. What happens is a cascading effect where a program essentially multiplies and replicates until it takes over an entire system and crashes it. Some viruses are smarter, they reproduce subtly, infect over networks, and so on. But in many ways, computer viruses can be said to grow, change, evolve over time. You can program a program that varies over time inherently to it, and those whose variations are successful will persevere.

We know that in life as we know it, DNA is crucial. DNA is a kind of code, more complex than binary. We could in principle make a program that compiles to binary and some bits are made to mutate as it were, change, every reproduction cycle, it is feasible that eventually a self sustaining advantageous organism might evolve. Simple steps leading to complex patterns. This is the point of cellular automata too. I have rendered one for your consideration— [View Here](#). See also [this](#) and [this](#). I welcome anyone to tell me why these are not alive. I am not maintaining that we ought to count them as alive, merely that you cannot not

count them as alive either. There are simply no good reasons not to. In fact, let us play a game. Points if you can give a good argument I cannot break regarding why a program cannot be said to be alive.

Finally, I want to make this claim. We are alive, we know that much. But because we are alive, that is all that we have known. We do not know what not alive is like. Others in our life die, but we do not. We never die because as soon as you die, you are not there. No one actually dies, because in death, there is no you, for it ceases. It is like asking somebody who has only lived a particular way what it is like to live another. We do not think it right to ask an American what life in Europe is like, and vice versa, Europeans cannot fathom what life is like in America unless they have lived it. We know things by comparison. So arguably, we cannot escape this enclosure problem. Our epistemic framework, because it is bounded, leaves out what is knowable and hence what is definable. We may never know what counts as life, but we can usually spot it.

Intelligence factors into it as well. Life exhibits complex patterns sometimes. Some life, like yeast, is simple—it merely seeks to spread, to occupy, and never becomes sophisticated. Some life, like humans, seek new peaks and highs. We do not merely seek to spread, we seek to create, something yeast cannot do. Intermediary organisms exhibit intelligence, but life itself, and I will say this on Wednesday, can be thought of as a complex algorithm, intelligent in virtue of its shape and movement.