

The Everyday Origin of Life

Aman Chawla

February 11, 2025

Abstract

In this paper, the authors propose a meta knowledge category that includes matter as an instance. This category, called MESK, is proposed as the solution to the pervasive question - what is life.

What is life? How did it happen to originate on the Earth and what happened thereafter? These nontrivial questions, seemingly biological, cannot be tackled from a rudimentary biologists perspective of examining anatomy or structure and function of present day organisms. An ideal approach would start with some sort of simulations - either on the computer, or in a wet laboratory - and study the conditions and outcomes that lead to life.

However, computer simulations are limited from the quantum perspective, cf. Richard Feynman's original work which proposed quantum computers. The idea was that a computer built genuinely on the quantum scale and with quantum principles alone would suffice to run simulations of realistic models of the real world. A classical computer running software emulations of a quantum device might simply not be good enough.

What would it take to run a simulation of an early Earth environment? Suppose we know the physical parameters such as temperature, abundance of water, and other elements, presence of heat and other energetic sources in such an environment; can we then introduce the basic building blocks of life (the relevant atoms) and hope that the overall system converges to life? How would we even claim to have seen life in the simulation?

Clearly, this is not an easy problem. Suppose we start with a definition that to see life in a system, is to see self-replication. Whereas this definition encompasses a large chunk of what we think life is, it clearly doesn't suffice. For example, it circumvents the issue of consciousness. Dumb matter replicating due to a "switch" of some sort that has turned on some lifeless machinery may not constitute genuine living matter.

If we think that consciousness is central to life, detecting or generating life in a simulation on a device becomes altogether a distant and unreachable goal. One may argue that to study a system capable of leading to consciousness, one would have to simulate it on a conscious substrate. This is an exact parallel of the argument that Richard Feynman made where he said that since reality is quantum mechanical, to accurately simulate real systems, you need a quantum computer.

What would such a substrate even look like or consist of? For this we first would need a clear definition of consciousness. For instance, when can an intelligent device be said to be genuinely conscious? Even if the device can replicate the actions of a human being, would that constitute the requisite threshold of consciousness?

Consciousness is a sort of self-awareness, where the system knows itself as existent, without reasoning about it, without even a thought. It therefore has been sometimes thought of as a new state of matter (cf. Max Tegmark). This of course presupposes that ordinary matter is not conscious. How would one even probe if a system is conscious? Since it is non-verbal, non-reason-based and not thinkable-about, such a probe presents problems.

Does biology offer a clue? If I claim that I am conscious, and I wish to parent an off-spring, can I do so without any aid? On the other hand we have asexual reproduction too. In these types of processes, is consciousness being handed down? Or since the parent is conscious and the off-spring is conceived by the parent, within the parent's internal milieu, the rudiments of consciousness are inherent in the off-spring? If so, if we trace back this parent-offspring chain, we should not find a beginning, since if we did, how did the first parent get consciousness?

Thus the characterization of consciousness is intertwined with the search for the origin of life. Another perspective that we can take, is to think that there was no first parent in another sense - not that there wasn't a first biological organism, but that the first biological organism wasn't the first bearer of consciousness. So we could extend the domain of c-bearers (for consciousness-bearers) to include non-biological entities, say water. Since however, these entities were also formed during the course of the Earth's growth, and are not primordial, where should we stop in our inclusion?

In this perspective, all matter is treated as conscious primordially and at all times. However, this cannot be falsified, because we don't have a good way of probing if a system is conscious. There is a sleight however which allows us to buy into this perspective: we may consider that since "we" are conscious and "we" are part of the soup of matter, such a perspective is plausible. So we can start with "having probed" into our own system, having found it to be conscious and then extend that to other systems in a generalization.

If our probe into ourselves on the other hand, yielded a blank - that we are not conscious - then we might abandon such a perspective as hopeless. Regarding those who have probed in the sense discussed in this work above, there can be therefore only two classes of individuals - those that found themselves to be conscious and therefore conclude that all matter everywhere and at all times is conscious, and those that, don't have a formulation such as this.

If one doesn't have a formulation such as this one, then one might have or have not solved the riddle of how did the first parent get consciousness. Either way, this is where we must take up that thread. One way to resolve this riddle is to say a conscious system from beyond the known universe coupled with the first parent and this is a common resolution. It has its own problems as are apparent.

Another way is to posit that consciousness can emerge from non-consciousness. However, as defined in the above text, such a stance would require a deeper understanding of what it means to know oneself as existent. Does this knowledge permit itself to be classified as ordinary type of knowledge or is it a special type? We know that ordinary knowledge of an individual can be augmented. Even physical systems which process information and knowledge can augment their store of knowledge. Suppose self-existence-knowledge (SEK) was also ordinary and could be augmented in a system from external sources. It would mean that before a certain time point, the system was without SEK and after it, it had SEK. The transition from no-SEK to with-SEK is a curious transition.

Understanding this transition requires an understanding of how SEK inheres in a system. This question however, reduces SEK to a type of matter, if we assume that systems are a type of matter. Nevertheless, one could assume that SEK was not matter of the ordinary type, but could still inhere in matter. This is fraught with logical fallacies. For example, one would need to specify how non-matter interacts with matter and then run into difficulties where we are doing a comparison between entities of different classes altogether - we can't add the number of apples with the number of oranges unless we are talking about the number of a "higher" type of more general "thing."

Thus we would have matter, SEK and both would be instances of another higher class, say, MESK. Then we could have MESK instances interacting with one another and it would not lead to any problems. What we have measured is matter and what we can say about ourself in the context of consciousness is SEK. This gives us a clue in the hunt for MESK.

Possibly MESK exists where we perform a measurement of matter while we are conscious of our self-existence. Indeed, the philosophies of mindfulness and conscious living precisely ask us to do this - act while being conscious. So we may want to jump to the conclusion that MESK is indeed the right approach. MESK forms or appears and becomes evident during conscious actions. Such actions could then engender SEK in different regions of our brain, specifically those involved in that conscious action. This might then be the emergence of consciousness from non-consciousness.

To summarize, either all matter at all times everywhere is conscious, or there may be emergence of consciousness from non-consciousness during daily, conscious, living.