

Common Misconceptions on Evolution

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That's such an interesting topic. I don't know where to begin this topic.

Let's start with the Universe, I don't know how well-versed you are with the laws of thermodynamics. In a nutshell, they describe the relationship between different forms of energies in different states. There are some interesting elements of simplicity as well as complexity within those four laws and their implications. Between the twin extremes of simplicity and complexity, is where everything comes in. If you think about it, too much chaos can lead to anarchy, too much uniformity can lead to a dull and boring regularity. Of all the systems of thought, theories, hypothesis, and opinions, the most convincing theories come from the field of mathematics called Complexity Theory. In it, it is mathematically proven that all dynamical and non-linear systems are highly sensitive to initial input. Meaning that one small change is all it takes for radically different outputs of two identical systems. Another interesting idea in Complexity Theory is the idea of how a great many systems begin in a chaotic and featureless state only to evolve in complexity over the time via an elaborate sequence of self-organization and self-complexifying. The by-product of a very similar process on earth is the emergence of life and its breath-taking variety and exhausting diversity. Similarly, if you go deeper into the abysses of self-organizations and self-complexities, you'd stumble upon features of that process that we can consciousness (whatever that even means), intelligence, organized civilizations, and questions of the nature that we seem to be asking.

Now, many things could've been different, maybe the earth was landlocked, gravity was a little weaker, and so on. Life would've been very different, and we may or may not have evolved to our current selves. But our current reality is what it is and we have come into existence, now it doesn't matter whether we like it or not, all of us are on the same boat trying to look at the world in a way that gives us the most comfort, meaning, and

significance. Charles Darwin when thinking upon the purpose of life in general wrote, "I feel most deeply that the whole subject is too profound for the human intellect. A dog might as well speculate on the mind of Newton. Let each man hope and believe what he can." I sometimes cannot help but feel the same way about many aspects of our reality. I would suggest that you check out John Conway's Game of Life (based on the principle of cellular automation), I'm sure you would come away profoundly impacted if you really understand what it means. I'll try to make a few generalizations to help us move forward in this conversation. In philosophy, there are concepts of Emergence and Reductionism. Emergence is when the whole is more than the sum of its parts, Reductionism is when the whole is nothing but the sum of its parts. Both of these concepts can be used complementarily to explain away many aspects of what constitutes these so-called complexities of life - including consciousness, intelligence, and everything in-between.

If you think about it, our biology (our body, nervous system, genetic code, and all the other baggage that comes with it) evolved incrementally through millions of years of modifications, adaptations, and slow refinement. So naturally, it followed a hierarchical system of development (with occasional strays here and there). Through Reductionism, we can breakdown almost all forms of life into fundamental components of simple atoms and molecules. Through Emergence, we can build all life forms from the same said atoms and molecules. In essence, they both are the same thing - we merely use different words to help us elevate and lower across the complexity ladder of a system (in this case, life). Now given the fact that there are some observable and many unobservable laws of physics, chemistry, and biology, every life form we can observe and study has some order to it. I'm sure it goes something like this: polymers building from monomers, lipids emergence from hydrophobic molecules, protein creation from monomers and polymers, nucleic acids, hereditary data stored in structures and components of RNA and DNA molecules to all the way up to complex behaviours arising out of sensory inputs, learning, experiencing, consciousness and so on. Although I do not have a formal background in biology (My formal background was Medicine), I've spent a considerable time educating myself enough about how different factors like the chemistry of life, cells, genetics, evolutionary mechanisms, forms and functions, diversity, and ecology play out in the biological world. Nature pulled a sneak on us through complexity emergence (also probably a lot of chance and circumstance was involved). Today, scientists and philosophers are trying to use the tools of reductionism to reconstruct the original processes that have led to the current functionality (including consciousness). Today, we have algorithms literally out-manoeuvring us at things (tasks, problems, and so on) that only a decade ago we thought would require deliberate thinking and intelligence. Just think about it, a stupid silicon chip better at everything than we are? like they say, if it quacks like a duck and walks like a duck, it is probably a duck. When it comes to metaphysical elements of consciousness and what-not, I cannot help but apply the same explanation to it as well.

Let's try to think about how different forms of life evolved (more or less chronological): prokaryotes, eukaryotes, multi-cellular life forms, neurons, cephalization, fish, amphibians, reptiles, mammals, primates, apes, and hominids. With hominids, the complexity of our behaviour, thinking, and self-awareness evolved in stages as well. They include some of the following: fire, tool-making, language, agriculture, civilizations,

writing, technology, philosophy, and so on. Do you see an Emergence emanating from nothing more than simple increments compounding with the simple passage of time? It's glaringly evident.

Given the fact that we have little to no data from prehistoric times, we cannot speak for the long lost ancestors of our race. But we can study things that they have left to better gain an understanding of how their lives might have looked like. Before scalable civilizations were a thing, we lived in tribes ranging anywhere from a couple of dozens to some 150ish members. Our tribes were highly hierarchical, we can get a faint picture of how our early hominid tribes looked like from studying other primates today. Although they are not exactly representative of our race, they do provide some interesting clues as to how it could've been. At some point, language became a thing. Another tool built on the backs of gestural and non-verbal communications to convey more depth and content. The simple act of communicating our thoughts (however primitive or sophisticated they may be) to others has started a conversation that spans from the dawn of humanity to now. It is within this conversation that most of our beliefs, ideas, opinions, theories, hypotheses, speculation, and faith systems lie in. When you have enough people believing in the same thing, they tend to mistake it for actual reality. This happened over and over many times throughout history, you can take a look at how faiths in different gods evolved over time. It's perfectly fine to believe in any system of thought to comfort our lonely existence in the unforgiving and often cruel reality, but to think that it offers all answers to all the questions would be simply foolish, immature and it's a complete disregard for the evidence found and advances in understanding ever since.

In hunter-gatherer tribal life, a majority of the day was spent hunting and procuring food (just like any other social animal today - dolphins, lions, killer whales, chimpanzee, and so on). In the time that remained, we probably groomed, told stories, look at the stars, mated, and always on alert (to avoid the jaws of predators) - all of this was only possible when our bellies were full, which as it happens, was very rare. It was either a fast or feast in that era. When we were afraid, we tried to find patterns and assign meanings to things that were not really in there to comfort us through the long and dreadful night. In the words of Stephen Gould, "The human mind delights in finding pattern—so much so that we often mistake coincidence or forced analogy for profound meaning. No other habit of thought lies so deeply within the soul of a small creature trying to make sense of a complex world not constructed for it."

Fast forward to 10,000ish BCE, agriculture was now widely realised and people finally had the security of food and small shelters (built around the farms). For the first time in history, humans now finally did not have to live in the fear of starvation, predation, climate troubles, and all that. We could finally sit down and think - for real. Everything we now have is a simple consequence of that collective decision by those primitive tribes. Agriculture led to villages, villages led to city-states, city-states to kingdoms, kingdoms to empires, and finally empires to civilizations. In the process of this, man has significantly freed up his time, with freed up time comes interesting and sometimes delusional thoughts. It's just that our intellect combined with capacity for language and abstraction enables us to desire anything that we can imagine. Although humans can be quite rational and can exercise intelligence in almost all situations, it's seldom that we

see people doing that. Like Edward Bernays once wrote, "In place of thoughts it has impulses, habits, and emotions." In most settings, human behaviour is highly animal-like, I hope you are perceptive enough to recognize these.

Marx once wrote, "Men make their own history, but they do not make it as they please; they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past. The tradition of all dead generations weighs like a nightmare on the brains of the living." If you think about it, it's actually quite deep. All of us are subjected to the social constraints that we inherit in a particular society combined with many other things that we inherit from our parents - all of which are passed onto us from an indifferent past.