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Novelty emergence mechanics as a core idea of any viable ontology of the universe (self.DigitalPhilosophy)

отправлено 1 месяц назад, изменено * автор kiwi0fruit

I'm sure that any ontology that desires to be applicable to the universe as a whole should contain novelty emergence mechanics.

> Before natural selection was discovered it was natural to believe-assume that the entire universe was created by primordial general intelligence (aka God) as intelligence was the only known thing capable of explaining novelty emergence. Evolution and natural selection is the best explanation for novelty emergence that we have at the moment: an endless process of survival and accumulation of novelty.

Quote from Applying Universal Darwinism to evaluation of Terminal values aka Buddha-Darwinism on objective meaning of life separated from subjective meaning of life (Cosmogonic myth from Darwinian natural selection, Quasi-immortality, Free will, Buddhism-like illusion of "Self").

Desire for novelty emergence explanation comes from reformulated ancient question "why is there something rather than nothing?". Reformulated into: "why these structures exist instead of other?"

And at the moment we really don't have a better mechanism-explanation for novelty emergence (in general) than natural selection.

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Posts about digital philosophy together with posts close in spirit (or logically connected) are welcome in this subreddit. For example the welcomed posts may be about:

- digital physics,
- digital probabilistic physics,
- artificial life,
- open-ended evolution,
- universal Darwinism in physics,
- philosophy of artificial intelligence.

Original definition of the digital philosophy (DP) by Edward Fredkin was rather specific but for example Gregory Chaitin's ideas are indeterministic instead of deterministic but they are still considered belonging to DP. So it's more an umbrella term now.

According to Wikipedia DP is advocated by certain mathematicians and theoretical

> Hence it would be a good try to embrace Universal Darwinism as an important part of a hypothetical ontology suitable for the universe as a whole. But surely natural selection by itself is not enough for ontology. But I believe that it's one of the core components.

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> You might be interested in the work of Stuart Kauffman

(u/ughaibu)

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> Kauffman is best known for arguing that the complexity of biological systems and organisms might result as much from self-organization and far-from-equilibrium dynamics as from Darwinian natural selection https://en.wikipedia.org/wiki/Stuart_Kauffman

Are you aware if what he calls self-organization can be reduced to BVSR (Blind Variation and Selective Retention). It's a more general formulation of selection that encompasses cases where there are no direct reproduction.

At the moment I'd like to fill some gaps in my knowledge on other ideas on novelty emergence.

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> Kauffman thinks that if we are going to base our metaphysics on science, physics is not the best choice, evolutionary biology is.

(u/ughaibu)

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I'm of the same opinion as him. But I guess it worth investigating what other ideas of novelty emergence is there. Some years ago I concluded for myself that there are no interesting alternatives to natural selection and BVSR as a novelty emergence explanations. But I may be wrong. Ilya Prigogine wrote something about it. But what I read wasn't as clear in it's workings explanation as natural selection or BVSR (despite how incomplete and ontology-dependent NS is).

physicists, including: Edward Fredkin, Konrad Zuse, Stephen Wolfram, Rudy Rucker, Gregory Chaitin, and Seth Lloyd.

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Evaluating terminal values

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> I (think I?) disagree. But lemme expound because my studies have rarely crossed the paths of ontological Darwinism. Only its epistemological cousin.
>
> An explanation of 'novel structures' need not rely on 'fitness' or its ability to replicate. On the grand ontological scale, whatever exists exists. Whatever does not exist, literally cannot. There is no survival of the fittest here--something that cannot exist simply will not exist. And if that necessited instance logically through relation or interaction leads to a future instance or structure, I view it as kinda predetermined.
>
> Hence saying that e.g. the present reality exists as a result of ontological darwinism applied to a first cause or eternal reoccurrence makes little sense to me.
>
> The answer to why is there anything rather than nothing at all cannot be casual. No casual explanation can explain existence. This either leads to infinite regress and (presuming you are not an infinitist or truth/validity coherentist) that's a bad start assuming you believe in the causation your theory of ontological darwinism requires.
>
> This does not apply to the reformulation of the question into, why do these structure exist instead of others. It isn't a reformulation, even. That's an entirely different question. It is, 'why is there different classes of being or particulars or universals,' or perhaps even, "why isn't there one static reality?"
>
> To answer why novelty exist (as a side note, structure and novelty are terms used by you that I am likely misunderstanding so my bad :< but lemme know), we must find a casual answer that logically predicates the existence of the structure. I don't believe a structure's "survival" is a thing. To me, everything that could exist--does.
>
> But it is an interesting idea. Do you use quantum or cosmological darwinism in your ontology? If so--and you are a hard realist--then perhaps I see validity. But not the truth of the matter. I really like the concept though. Gotta read up on it more! :)

(u/OzSai)

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[–] **kiwi0fruit** [S] 1 очко 2 мин назад

> present reality exists as a result of ontological darwinism applied to a first cause or eternal reoccurrence makes little sense to me.

What you said above this quote makes no sence to me. For me it's obvious to use a working presumption that "present reality exists as a result of SOMETHING". Not just exists but becasue of something. Darwinian process is the best hypothesis of this something that I've got.

But this familiar presumption is incomplete. Infinite regress problem tells us that there should be something that is "just is". So we have something that "just is" and something that exists because of this "just is".

> That's an entirely different question.

Fort me that exactly the same question but formulated better. But that's not really important here.

> I don't believe a structure's "survival" is a thing. To me, everything that could exist--does.

Everything aroud me are structures and processes on structures. Anything that can be described as a "property" can be reduced to some underlying structure. And I actually see some structures surviving in natural selection and evolving. Some could have existed but they don't and other structured exist instead. Heck, maybe **all** structures survive? Worth checking out this hypothesis. Yep, I'm not a fan of Everett interpretation of the QM. Anti-fan even.

> Do you use quantum or cosmological darwinism in your ontology?

Lee Smolin's cosmological natural selection looks like a good and plausible piece of the puzzle. As about quantum darwinism - I've read a bit about it. But it's more like some reduced (degenerate) form of darwinism that can (maybe?) explain wave function collapse. But I had no use for it in my attempts. But incorporating quantum would be an important problem. For now I only scratched it a bit:

> The discrete ontology might not be enough to express our current universe. See discussion for "Is bounded-error quantum polynomial time (BQP) class can be polynomially solved on machine with discrete ontology?":
>
> > What is your opinion and thoughts about possible ways to get an answer whether problems that are solvable on quantum computer within polynomial time (BQP) can be solved withing polynomial time on hypothetical machine that has discrete ontology? The latter means that it doesn't use continuous manifolds and such. It only uses discrete entities and maybe rational numbers as in discrete probability theory? By discrete I meant countable.

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BQP

> In computational complexity theory, bounded-error quantum polynomial time (BQP) is the class of decision problems solvable by a quantum computer in polynomial time, with an error probability of at most 1/3 for all instances. It is the quantum analogue to the complexity class BPP. A decision problem is a member of BQP if there exists a quantum algorithm (an algorithm that runs on a quantum computer) that solves the decision problem with high probability and is guaranteed to run in polynomial time. A run of the algorithm will correctly solve the decision problem with a probability of at least 2/3.

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[–] **dudinax** 1 очко 1 месяц назад

> Before natural selection was discovered it was natural to believe-assume that the entire universe was created by primordial general intelligence

There was only a short period in the early days of technological society where this kind of belief was natural. For most of our past, it's been more natural to imagine complexity coming out of a sort of birth, or as growing from the body of a dead thing.

We're moving from a naturalistic view of emerging complexity where complexity = life, through a complexity sky-hook of a designer god, where complexity means a great work (ill suited for thinking about life), to an analytical view of emerging complexity that encompasses life but recognizes other ways complexity can emerge.

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Moving where to? What other ways? The natural selection and intelligent design are clear enough ways of complexity emergence. How do other ways work and produce novel complex and stable structures?

And here I mean not just any complexity emergence mechanics but a suitable to answering questions like, for example, why we have this particalar number of space dimensions instead of the other.

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[–] **dudinax** 1 очко 1 месяц назад

Early in our history, most of the time we've existed, it seemed obvious that life sprang from life, life sprang from death, that a complex form might spring from a lesser form, and that anything might be alive, even the world or the whole universe.

When talking about dimension count, 'intelligent design' isn't really an explanation, it's just a guess. It's no better than explaining that the universe grew out of the body of a giant pig, and three space dimensions are the suitable count for a pig.

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[–] **kiwi0fruit** [S] 1 очко 1 месяц назад

I prefer "explanation" that the Great Leopard regurgitated a wool ball that was a Universe :) As about novelty emergence explanations I know no better than natural selection.

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