Paul Thyry (Baron D'Holbach / Mirabaud) - French / German Sympathizer With Some Epicurean Ideas

Post by “Martin” of December 29, 2023 at 3:32 AM

> Quote
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> > *Quote from Don* *Their contention is that if we knew the position of every atom and the physical laws that pertained to them, it would be possible to accurately know what would happen next ad infinitum.*
>
> Would that entail that there is no randomness in the system? That every event is perfectly predictable?
>
> Now I want to hear from Martin! 🤔

Here is a slightly expanded version of my lost comment from yesterday:

In classical mechanics, there is no principal lower limit to the error with which we can know positions and speeds of bodies like there is in quantum mechanics. However, the error will never be reduced to 0. The residual error will propagate to large errors with time. That means events in the far future are not predictable. Therefore, even the simplistic "billiard board" model does not support hard determinism. E.g. the trajectory of Earth can be predicted some million years ahead (if there is no collision with a huge rogue celestial body) but not hundreds of millions of years:

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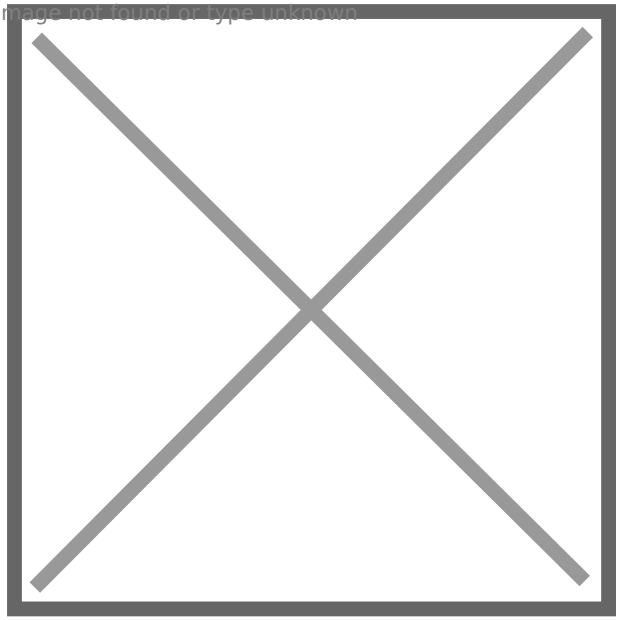

[How far ahead can we predict solar and lunar eclipses?]
The solar system is non-integrable and has chaos. The sun-earth-moon three-body system might be chaotic. So, how far into the future can we predict solar…
physics.stackexchange.com

Hard determinism means that even the distant future is entirely determined by what happens now or has happend in the very distant past. That means all information about the future state of an isolated thermodynamic system is contained in the present state. Increase in entropy means increase of the information needed to completely describe the system. If the complete information has already always been there, entropy does not increase, in contradiction to what we observe for sufficiently large isolated systems.

The concept of free will makes sense for a supernatural soul but does not fit well into a materialistic world.

Instead, agency is a better concept. It works whether the materialistic world is deterministic or not. In a deterministic world, any moment of the distant past completely determines the action which an individual takes, but it is still impossible to accurately predict the action because the complete information of the past is impossible to gather, and the consequences are impossible to calculate. Without hard determinism, indeterminacies at the microscopic level add their influence on the present such that the predetermination by the past is weaker the further that past is in the past. The indeterminacies accumulate to increase variation of the outcome the further ahead the future under consideration is. This increases the variation in the observed output and would reduce but not prevent probabilistic success of predictions.

The indeterminacies at the microscopic level do not constitute a kind of materialistic soul as emergent property. My agency is derived from the past and - if there is no hard determinism - by the outcome of ongoing indeterminacies. These indeterminacies may add to the options to choose from and thereby enhance agency.

Anyone can predict that I will eventually get up to eat something, but no one can predict the second in which I will do that, and prediction of my choice of food is possible with only probabilistic success. The more complex the action to be predicted is, the lower are the chances of prediction.

Further progress in the development of artificial intelligence might eventually show whether complexity of a deterministic artificial neural network is enough to produce some kind of consciousness and meaningful pioneering creativity.

My best guess is that intentionally adding indeterminacies to the network enables or at least facilitates the ability to come up with genuinely new ideas.