

Review of: "Evolution, Through the Lens of a Physicist"

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Potential competing interests: No potential competing interests to declare.

Considering evolution as seen with the general background of a physicist is an interesting issue. Introduction and Chapter 2 : *Can a physicist distinguish between chance and purpose?* are well documented and do not raise any special comments.

Concerning Chapter 3. *Is the whole more than the sum of its parts, or what is life?*

"When we analyze the body of a living being, for example, a human being, we ultimately find nothing but what we know of lifeless matter. The laws of physics are as valid for the engineer as they are for the biologist and physician. This observation alone cannot explain the full spectrum of biological phenomena, but it excludes certain forms of vitalism [Kirschner 2000]. In that view, certain nonlocalizable substances are responsible for specific biological functions."

is puzzling and let the door open for some "unlocalizable" form such as creationism or a great watchmaker? The author should explain what he means by "nonlocalizable" .

The author should also mention the chemist's approach quite different from the author lens: life is like a chemical automaton, an assembly of molecules driven by chemical forces, like aggregation, self-organization, self-replication, autocatalysis. No additional mysterious force is needed (see for example Brack A, Troublé M (2010) Defining Life: Connecting Robotics and Chemistry. Orig Life Evol Biosph 40:31-136.)