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SETI IN THE LIGHT OF COSMIC CONVERGENT EVOLUTION

Abstract

Theodosius Dobzhansky, one of the founding fathers of the modern evolutionary synthesis, once famously stated that "nothing makes sense in biology except in the light of evolution". Here it will be argued that nothing in astrobiology makes sense except in the light of cosmic convergent evolution (CCE). This view of life contends that natural selection is a universal force of nature that leads to the emergence of similarly adapted life forms in analogous planetary biospheres. Although SETI historically preceded the rise of astrobiology that we have witnessed in the recent decade, one of its main tenets from the beginning was the convergence of life on a cosmic scale towards intelligent behaviour and subsequent communication via technological means. The question of cultural convergence in terms of symbolic exchange, language and scientific capabilities between advanced interstellar civilizations has been the subject of ongoing debate. However, at the core of the search for extraterrestrial intelligence lies in essence a biological problem since even postbiological extraterrestrial intelligences must have had an origin based on self-replicating biopolymers. Thus, SETI assumes a propensity of the universe towards biogenesis in accordance with cosmic convergent evolution, a theory which posits the multiple emergence of life across our cosmos. Consequently, we have to wonder about the biophilic properties the universe apparently exhibits and try to find a theory that is able to explain this "fine-tuning" in naturalistic terms. The aims of this paper are as follows: 1) to critically discuss ideas related to SETI and CCE such as the "Selfish Biocosm Hypothesis" and "Cosmic Convergence"; 2) to emphasize the importance of convergent evolution in astrobiology and 3) to sketch out an epistemological model that is based on the notion of convergence in nature and which ultimately points towards a deeper understanding of physical reality.