

A THERMODYNAMIC UNIFICATION OF PHYSICS AND BIOLOGY

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ABSTRACT

A recent publication hypothesized that there is a “Singularity of Nature”[1] through which basic thermodynamic principles can be used to reconcile physics and biology. In this way, the mission of the IAISAE to merge the natural and social sciences becomes tractable. The protocells that populated Earth originated from lipid-based micelles, capable of forming and deforming in response to the heat of the Sun, still maintaining their structural integrity. This hysteretic property is the origin of the molecular memory necessary for evolution. It is also argued that the vital relative negentropic status of the first protocells was the consequence of the obligate equal and opposite reaction to the Big Bang based on Newton's Third Law of Motion. It was this phenomenon that permitted the ongoing thermodynamic coupling between the outward environment and the interior of the cell to sustain the first primitive life. The complex cell developed out of this conjunction, fully establishing the unicellular form as the first Niche Construction as a continuous process, whereby an organism fashions itself and its environment concurrently. Those crucial evolutionary leaps that followed, such as endosymbiosis, are reiterations of this established pathway, which by necessity must adhere to commencing Cosmic Laws. Evolution can thereby be understood as the continuous process of the internalization of the environment within thermodynamic proscriptions. Further evolutionary development represents the multicellular augmentation of these fundamentals based on principles of cell-cell communication, which extends across embryologic development. In this manner, multicellular cooperativity, human physiology, society and culture all refer back to the Singularity/Big Bang as fractal iterations. This framework reconciles with the nilpotent universal computational system of Marcer and Rowland [2]. Biological reproductive reiterations that always refer to the zero origin of the Singularity are a 'creation operation' that 'conserves and proofreads' to attempt to ensure the fidelity of life.

Keywords: singularity of nature; micelle; endosymbiosis; Big Bang; evolution

References:

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- [2] Marcer, Peter J., and Peter Rowlands. "How Intelligence Evolved?." In AAAI Spring Symposium: Quantum Interaction, pp. 46-51. 2007.