

EVOLUTION, COGNITION, AND THERMODYNAMICS

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ABSTRACT

Classical Darwinism can be summarized as a theory of adaptation informed by memory. As classical Darwinism morphed into a mechanical theory of gene selection, Darwinism's theoretical foundation has become increasingly alienated from the distinctive phenomenon of life itself. Among life's distinctive attributes is adaptation, which is a knowledgeable and inherently purposeful process. includes adaptation as a distinctive feature. Starting from first principles, I build a model of adaptation in the context of life as a thermodynamic phenomenon. Along with this, a broader concept of hereditary memory emerges that goes beyond modern Darwinism's narrow gene-centric focus, which recovers Darwin's own vision of evolution as adaptation informed by memory. At the same time, adaptation's inescapable purposefulness makes evolution a purposeful phenomenon, and undercuts Darwin's concept of evolution as natural selection.

Keywords: adaptation, hereditary memory, niche construction, purposefulness, natural selection