## Elan Vital Revisited: Bergson and the Thermodynamic Paradigm

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## Abstract

Bergson's concept of *élan vital* has been often disparaged as a classic expression of vitalism, a charge which has contributed to the relative neglect of his thought in contemporary philosophy of biology. The first part of this paper argues against the vitalistic interpretation of Bergson's L'évolution créatrice (1907) in favor of an interpretation based on his oftenoverlooked reflections on entropy and his ongoing engagement with the energeticist physicists of his time (e.g., Faraday, Kelvin, Duhem). It is shown that Bergson's view of evolution and living organization resonates deeply with more contemporary approaches belonging to the "thermodynamic paradigm" of theoretical biology (Brooks and Wiley, 1986; Wicken, 1987) in different aspects, including the critique of selectionism, the critique of adaptationism, andmore generally-the promotion of a "metabolism first" conception of the origin of life and of the minimal living system. Viewed in light of this thermodynamic interpretation, together with Bergson's radical process metaphysics, it becomes clear that *élan vital* is not a "vital force" distinct from physical forces, and that *élan vital* and matter are opposed not as static substances but rather as energetic processes of organization and degradation. After having shown these connections between Bergson and more contemporary work, the second part of the paper will examine one challenge Bergson's philosophy of life poses for us today. This is to conceptualize how the thermodynamic-energetic condition of organization-élan vital-is intrinsically coupled to the living system's particular duration  $(dur\acute{e})$ , or the way its existence in time is organized.

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