An introduction to “An outline of General System Theory”

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1 Emergent Publications

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Abstract

Introduction

We concluded our recently published collection of essays, entitled *Emergence, Complexity, and Self-Organization: Precursors and Prototypes* (ISCE Publishing, 2008), with excerpts from Ludwig von Bertalanffy’s classic 1950 article, “An Outline of General System Theory.” We decided to include Bertalanffy’s essay not only because of its prescience in predicting the rediscovery of systems, but also because of its positive contributions to the discussion of emergence, complexity, and self-organization. As such, it is worth reprinting here.

Bertalanffy explicitly acknowledges the role that interactions among components play in producing organized complexity. By also recognizing the inescapable irreducibility of the interdependence that comes into play as a result of those interactions, he gives ontological status to the wholeness characteristic of systems. He also notes that, unlike the systems that have traditionally been studied in physics and chemistry, organisms and living systems are open systems, and that the continuous exchange of matter and energy with the environment causes significant differences to appear, not the least of which is the ability of living systems to achieve a metastable steady state maintained by the flux of energy and materials.

Echoing Kant, who is the first writer to appear in our collection, Bertalanffy, ends with a discussion of the teleological character present in the structure and form that results from the self-organization of open systems, and, in particular, the equifinality in evidence in all living systems, that is, their tendency to reach the same final state despite tracing very different trajectories.

Notes

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