

TELEODYNAMICS: SPECIFYING THE DYNAMICAL PRINCIPLES OF INTRINSICALLY END-DIRECTED PROCESSES

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ABSTRACT

Advances in analyzing the relationship between near-equilibrium thermodynamic processes and far-from-equilibrium self-organizing processes have led to important insights concerning living processes, but have not been able to account for the transition from inorganic to living systems that exhibit intrinsic self-preservation, self-synthesis, self-reproduction, and self-reconstitution in response to damage. In this presentation I will demonstrate that yoked self-organizing processes which generate each others' boundary conditions can produce a form of co-dependent unity that exhibits these properties. This demonstrates that thermodynamic analysis needs to be expanded to include three discontinuous but nested levels of dynamical organization. Each can be defined by three "laws" of transformation — a conservation/symmetry law, a law of spontaneous symmetry breaking and change, and a law of min/max boundary conditions. A simple empirically testable molecular model system is described for exploring these dynamical properties.

Keywords: teleodynamics, self-organization, transformation