Laws, language and life : Howard Pattee’s classic papers on the physics of symbols with contemporary commentary

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Abstrak

Howard Pattee explains why all non-dynamic symbolic and informational controls act as special (allosteric) constraints on dynamical systems. Pattee also points out that symbols do not exist in isolation but in coordinated symbol systems we call languages. Such insights turn out to be necessary to situate biosemiotics as an objective scientific endeavor. By proposing a way to relate quiescent symbolic constraints to dynamics, Pattee’s work builds a bridge between physical, biological, and psychological models that are based on dynamical systems theory. Pattee’s work awakes new interest in cognitive scientists, where his recognition of the necessary separation—the epistemic cut—between the subject and object provides a basis for a complementary third way of relating the purely symbolic, computational models of cognition and the purely dynamic, non-representational models. This selection of Pattee’s papers also addresses several other fields, including hierarchy theory, artificial life, self-organization, complexity theory, and the complementary epistemologies of the physical and biological sciences.