

Systems Theory: Synchronicity, Indeterminacy and Doubt

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Abstract

Possibly the most underrated gift humans are endowed with is doubt. Doubt teaches us all basic and fundamental processes cannot be thought of in a reductive way. In fact, all biological and social applications have proven to be *irreducible*, co-evolutionary and stochastic. The Human Genome Project (HGP), for instance, ushered in a new way of framing the critical issue of processing vast amounts of information. Downloaded, the HGP consists of a long string of Ts, As, Cs, and Gs. The HGP mastered not only the technique of using a little of information (in genes) to achieve a lot (Homo Sapiens) but also showed that *useful* information was not reductive. Gene expression, cellular metabolism, and cellular signaling - all basic and fundamental cell processes – become significant because they contribute to the complexity presented to us as life.

This paper considers complexity thinking as an essential paradigm shift appropriate for constructing sustainable practices. Derived originally from work done in the mid 20th Century on indeterminate systems, complexity thinking is based on the earlier work on Information Theory (Shannon), and General Systems Theory (Bertalanffy). These ideas were attempts to present in a rigorous way the treatment of systems as an interdisciplinary science. Systems Theory takes advantage of asset mapping, synchronicity across and within disciplines and information aggregation. Using the metaphor of the canon and the fugue, Systems Theory is presented here with its particular advantage in the indeterminate, multidimensional processes necessary for visionary practices directed towards biodiversity and natural systems ecologies of co-operation.