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Self-similarity and T-patterns from RNA to cell city to neurons and the only big-brain mass-societies

This talk concerns self-similarity of patterning and organization across many levels of biological organization and orders of magnitude, implicating a self-similar fractal-like pattern called T-pattern, a natural or pseudo-fractal pattern, recurring with statistically significant translation symmetry (Magnusson et al eds. 2016). Here presented in the order realized within a longstanding primarily ethological (i.e. biology of behavior) project beginning in the early 1970's concerning social interaction and organization in social insects and primates including humans and inspired mainly by the work of Lorenz, von Frisch and Tinbergen for which they shared the Nobel Prize in Medicine or Physiology in 1973. The smallest animals were social insects and no implication of self-similarity nor nanoscale phenomena where now behavior of proteins is observed. The present project has focused on pattern definitions and detection tools; the T-pattern type, detection algorithms, and software, THEME™ (Magnusson, 1982 to 2017). Allowing abundant detection (Casarrubea *et al*, 2015), in animal and human behavior and neuronal interactions (Nicol *et al*, 2015) showing T-patterned self-similarity of interaction between and within brains. The RNA world invented external memory as purely informational T-patterned DNA strings; now is the DNA world. Billions of years later in a biological eyeblink humans invented external memory strings as T-patterned texts allowing the development of modern science, technology and human mass-societies unique among large-brained animals only animals to use long external strings greatly outlasting citizens. T-patterned text strings forming a continuum from nanoscale chemistry to human culture, suggesting the importance of T-patterns in biological organization.

Biography

Magnus S Magnusson, Research Professor. PhD 1983, Copenhagen University. Author of the T-pattern model initially focused on the real-time organization of behavior. Co-directed DNA analysis. Numerous papers and keynotes at international mathematical, neuroscience, proteomics, bioinformatics and religion conferences in Europe, USA, and Japan. Deputy Director 1983-1988 in Museum of Mankind, Paris. Repeatedly invited Professor in psychology and biology of behavior at University of Paris (V, VIII & XIII). Founder and Director of Human Behavior Laboratory, University of Iceland. In the formalized collaboration between 32 European and American universities based on "Magnusson's analytical model" initiated at University Paris V, Sorbonne, in 1995.

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