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### T-patterns and temporal and spatial self-similarity across many orders of maginitude: From proteins and neurons to only big-brain mass societies

This talk may be seen as a message between areas with boundaries increasingly blurred. The ongoing work was initially inspired by the animal and human ethological (biology of behavior) research of Nico Tinbergen, Konrad Lorenz and Karl von Frish for which they shared a Nobel Prize in 1973, and by E. O. Wilson's research on insect societies. The focus, however, soon turned to defining and detecting recurrent behavioral patterns exploiting the increasing computational possibilities given adequate pattern models and software. Developing both became the major task since the late 1970's resulting around 1980 in a pattern type, named T-pattern and corresponding detection algorithms implemented as THEMETM. T-patterns are multicategorial, hierarchical and self-similar, recurring on a single dimension with statistically significant translational symmetry now abundantly detected in human and animal behavior and interactions. When later applied to the neurons in neuronal networks in rats' olfactory lobes, numerous complex T-patterns were found. Self-similarity of temporal patterning thus appeared on very different levels of biological organization. Consequently, the spatial structure of DNA and proteins has been explored suggesting much (striking) T-pattern organization. T-pattern related self-similarity over many orders of magnitude in biological spatial and dynamic structure thus seems to exist. It, moreover, seems to include striking self-similarity from Cell Cities (protein cities) to the only big-brain (i.e. human) mass-societies, critically based on evolving, durable and massively copied T-patterned strings of, respectively, molecular and alphabetic units, external to the citizens.

#### Biography

Magnus S Magnusson is a Research Professor, Founder and Director of the Human Behavior Laboratory- University of Iceland. He/She has obtained his/her PhD in 1983 from University of Copenhagen. He/She is the author of the T-pattern model and detection software THEMETM (PatternVision.com); focused on real-time organization of behavior. He/She Co-directed DNA analysis and published numerous papers (>1700 citations) and delivered talks/keynotes in Ethology, Neuroscience, Mathematics, Religion, Proteomics and Mass Spectrometry. He/She served as Deputy Director 1983-1988, at National Museum of Natural History, Paris and was repeatedly invited as temporary Professor at the University of Paris, V, VIII and XIII. Since 1995, in collaboration between now 32 universities initiated at the University of Paris V, Sorbonne, based on "Magnusson's analytical model".

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