

JOINT EVENT

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&

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### From protein to human cities the first and only large-brain mass-societies: Structural and functional self-similarity and translation symmetry across time and space?

Striking similarity, but no self-similarity, exist between the mass-societies (i.e., of approximately  $>10^4$  individuals) of such distantly related organisms as social insects and modern humans, while striking self-similarity exists between their structured mass-societies and those of their citizens that are mass-societies of cells that again are mass-societies of proteins (also called Cell Cities). Natural, as opposed to mathematical, self-similarity should probably be expected in a generally (statistical pseudo) fractal universe. This may be exemplified by the statistically self-similar repeated pattern type, called T-Pattern that is also characterized by significant translation symmetry, as it has been detected among other in the dynamic behavior and interactions of humans and in networks of neurons in living brains, while resembling (spatial) patterns on DNA. The brain-less mass-societies of proteins may thus provide useful and even essential ideas for the understanding of the biologically recent and first and only large-brain mass-societies, mostly evolved at the speed of cultural evolution among brains biologically evolved during a far longer (nomadic and illiterate) small-group “everybody-knows-everybody” past. Structural and functional (self-) similarities between protein and human mass societies are explored among others in terms of T-patterns appearing across time and space and from protein to human mass-societies, where extensive copying and spreading of standard T-patterned strings (texts) existing and evolving outside brains, seem reflections of the social ways of proteins, much as human schools, laws, religions and money.

#### Biography

Magnus S Magnusson is a Research Professor. He completed PhD in 1983 from the University of Copenhagen. He is an Author of the T-pattern model initially focused on the real-time organization of behavior has co-directed DNA analysis. He presented numerous papers and invited talks at international mathematical, neuroscience, proteomics, bioinformatics and science of religion conferences and at leading universities in Europe, USA and Japan. He is a Deputy Director during 1983-1988 at Anthropology Laboratory, Museum of Natural History, Paris and repeatedly invited temporary Professor in Psychology and Ethology (Biology of Behavior) at the University of Paris (V, VIII & XIII). Since 1991, he is the Founder and Director of the Human Behavior Laboratory, University of Iceland, in formalized collaboration between 28 European and American universities based on “Magnusson’s analytical model” initiated at University René Descartes Paris V, Sorbonne, in 1995.

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