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How minds with brains evolved from brainless Synapse-Ancestors

Abstract:

I'll argue that biochemical processes in synapses are more important than currently favoured neural mechanisms for deep forms of spatial intelligence that led ancient humans to discover, and use, types of geometric and topological necessity and impossibility, centuries before Pythagoras was born. Complex temples, pyramids and other structures required transporting large blocks of stone across land and water. Much earlier, related forms of spatial intelligence were used in processes of evolution, reproduction and development to construct increasingly complex components of increasingly complex ancient forms of life e.g. hatching processes in eggs of vertebrates and processes of biochemical disassembly and reassembly in insect metamorphosis in cocoons, producing not only new physiologies but also complex new spatial competences, e.g. flying to plants to feed on nectar, and mating (in some cases while flying!) after metamorphosis. There are unobvious connections with physics, chemistry (especially biochemistry), biology, neuroscience, psychology, computation, various branches of philosophy and their histories.

Biography

Aaron Sloman completed a BSc. in mathematics and physics at Cape Town university (1957) then a DPhil in Philosophy of mathematics defending Kant at Oxford (1962). His ideas continued developing at Hull University, Sussex University, then, since 1991, University of of Birmingham (UK). Since officially retired (2012) continued research on the meta-morphogenesis project with most recent results summarised in the abstract for this talk.