



CTN LINDHARD LECTURE

Stuart Kauffman, University of Calgary

Stuart Kauffman (born 1939) is an American theoretical biologist and complex systems researcher working on the origin of life on Earth. He has written numerous articles and books on complexity, self-organization and non-equilibrium dynamics in nature, and is particularly well-known for his controversial book "Origins of Order" written while at the Santa Fe Institute for complexity research. Today, Kauffman is Professor of Biological Sciences and of Physics and Astronomy, and the Director of the Institute for Biocomplexity and Informatics at University of Calgary.

The Open Universe and the Sacred

Tuesday 9 June 2009 at 15.15, building 1232-115. Coffee from 15.00.

Darwinian "preadaptations" are features of an organism of no selective use in its current environment that might come to be of selective use in some different environment. In that case, due to natural selection, a new functionality can arise. An example is a swim bladder that adjusts buoyancy in some fish; paleontologists believe swim bladders arose from the lungs of lung fish. Such phenomena challenge the view, common in Western science since Descartes, Galileo, Newton, and Einstein, that all that unfolds in the evolution of the universe is describable by natural law.

The essential issue is the determination of possible preadaptations. How would we list all possible selective conditions and specify the feature(s) that might become preadaptations? Indeed, the universe is "open" in complexity but its partially lawless becoming is also not random. We have no model of this in standard science. And yet, if we do not know what CAN happen then reason is an insufficient guide to living our lives.

I believe we need a new Enlightenment and a new symbol to denote the natural creativity of the universe.



BIOINFORMATICS RESEARCH CENTRE (BIRC)

FACULTY OF SCIENCE
AARHUS UNIVERSITY

Professor Klaus Mølmer, Department of Physics and Astronomy, AU
Professor Carsten Wiuf, Bioinformatics Research Centre, AU