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## Gaia the artist -- towards a unified higher-dimensional paradigm of life and beauty

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The Gaia hypothesis as an ecological hypothesis is proposing that the biosphere and the physical components of the Earth (atmosphere, cryosphere, hydrosphere and lithosphere) are closely integrated to form a complex interacting system that maintains the climatic and biogeochemical conditions on Earth in a preferred homeostasis. Although successful within the current scientific paradigm the explanation of „planetary sentience, or sensitivity“ becomes extremely difficult. As Hegel said, pure truth about nature is only perceivable by a poetic method.

Therefore we are proclaiming Gaia, the Earth as a female artist -- as advocated by 16th century scholar Giordano Bruno. This would imply to include such nonscientific categories as beauty, creativity and cosmic consciousness. Hence a unified Gaia theory would require a new scientific paradigm.

Based on a previously proposed higher dimensional spacial model (Gaia 5.0) as „pattern that connects“ that explains the Earth' intrinsic dynamics we aim to extend our concept to the question of cognition and planetary sentience, or sensitivity.

Hence we claim that Gaia theory needs an extension of categories in order to understand the full scope of this spectacular place of livelihood and beauty.

Therefore we examine the prevalent relational biology that tries to overcome Newtonian point mechanics by relying on Aristotle's „formal causes“ of the autopoietic organization and (M,R)-system as conceptualized by R. Rosen who refers to a mathematical structure, e.g. mapping of functions. Distinct to differential geometry we suggest as previously introduced higher dimensional geometrical framework (Gaia 5.0) a hyper-Euclidean geometry that allows to understand complex systems based on group theory providing all kinds of symmetries in nature based on a spacial continuum.

As a consequence we must not rely on thermodynamic premisses and life and tornados don't belong to the same class of naturally complex systems. Instead we refer to Schrödinger's description of a living cell as 4-dimensional entity. Based on complex number spaces we may seek for further distinctions of processes and define ordered structures based on number theory.

Based on this we try to understand anticipatory systems by assigning Bayesian networks to (hyper-) complex number spaces. -- Hence Gaia is not playing dice but takes a *random walk in*

*Monte Carlo.*