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Paper + Poster: **DYNAMICS OF THE UNSEEN**

Abstract:
From the theory of evolution to embryology and statistical physics, the ”landscape” metaphor - qualified as “adaptive”, “epigenetic”, or “energetic”, depending on the domains under consideration - synthetically captures several essential questions for the modelisation of complex systems :
What are the nature and the evolution of equilibria that characterise the landscape? How is its stability characterised? And its robustness? What is the effect on a landscape of different kinds of disturbances or interactions with the environment? At what spatiotemporal scales is it suitable to situate such analyses and investigations? What are the variables that are represented by the landscape? In what space do they live?
The goal of our DYNLAN research program is to address these questions through the design of dynamic tri-dimensional landscapes, that will thus act as dynamical instantiations of the unseen mechanisms and properties of the morphogenesis towards which the landscape metaphor points.
In the theoretical part of this paper we will present landscape metaphor as a generative mould of possible morphologies. We will then present the first instantiations of this “2nd ordered bio-inspired design”, in opposition to a mimetic bio-inspired design.

Topic: Complex Systems & Design

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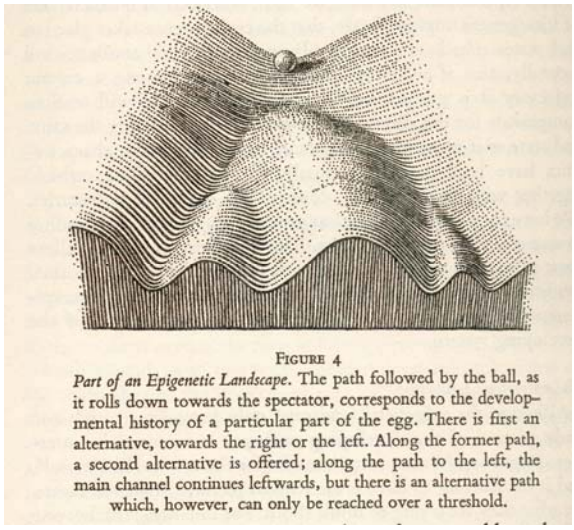

FIGURE 4
Part of an Epigenetic Landscape. The path followed by the ball, as it rolls down towards the spectator, corresponds to the developmental history of a particular part of the egg. There is first an alternative, towards the right or the left. Along the former path, a second alternative is offered; along the path to the left, the main channel continues leftwards, but there is an alternative path which, however, can only be reached over a threshold.

Conrad Hal Waddington (1957). The strategy of the genes, Allen & Unwin, p. 29.

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Keywords:
dynamic landscapes, morphogenesis, theoretical biology, complex systems, 2nd ordered bio-inspired design