

GEORGES CHAPOUTHIER
THE MOSAIC THEORY OF NATURAL COMPLEXITY:
A SCIENTIFIC AND PHILOSOPHICAL APPROACH,
Preface by Peter McCormick, Paris,
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The little book summarises many years old biological research and philosophical reflection on the living beings. Its thesis is the substantiation and at the same time the description of the *forms* in which matter, energy and information are structuring in living beings and developing according to the lesser loss of energy and the most secure lasting or, as Alfred J. Lotka said, “structures that are adapted to direct available energy into such channels as lead to the maintenance of the environment required for their growth” (Alfred J. Lotka, *Elements of Physical Biology*, Baltimore, Williams and Wilkins, 1925, p. 15). But in order to realise this, the living beings and their components acquire the best *forms* they arrive to attain during a history of both internal structuring relationships and relations with/in the environment.

However, the conclusion about these *best forms* is not (only) a philosophical speculation, but the result of comprehensive surveys of different levels of the structuring relationships of the living beings. This is one of the strong points of the book: the *demonstration* of the theory that is both of theoretical biology and of philosophy. (But can we still separate or distinguish a good philosophy from the theory of a domain?)

Therefore, as it already has appeared, the problems revealed as the *contents* of the book – giving it other strong points – focus around the forms/best forms. But the discussion that aims to summarising in *concepts* the many different experiences/levels of biological existence (and not only “purely” biological, but also *real*, thus also cultural/within the cultural environment) arrives to these concepts after the scientific description of the above levels. The first moments of the author’s life long research have certainly lighted the *idea* of *mosaic* type forms, and then this idea was a *hypothesis* that had to be verified during other moments of research. So, in the present book an exposing of the *theory of complexity of living beings* through two forms of relations – because juxtaposition and integration are not Aristotelian/speculative forms, but only *forms of relations* – so, the “*juxtaposition* of similar units and then *integration* of these units, once modified, into structures at a higher level of which the become parts” (p. 6) takes place. But when thinking on these forms realising the complexity of living beings, we may understand another, deeper aspect than that of forms: that of the *economical/“thrifty”* character of the structuring of life – having certainly physical and biochemical basis – and opposing any dissipation or misuse of any material, energy and informational element the living beings contain. The *mosaic form* is just the appearance – scientifically arrived at after a comprehensive analysis of evidences – and proof of this real character, and of extreme importance for the understanding of life in its inherent environment.

The readers have exciting proofs/descriptions of the mosaic form and the principles of juxtaposition and integration in the functioning of *cells*, at *molecular* but also *anatomical* levels (in *organs* as the brain and the sexual reproduction), at that of *social structures* in animals. But they have also engaging philosophical inferences related to the *continuity* and *discontinuity* of animals and humans, as well as to the epistemological view about all of these problems. The links Chapouthier presents with both dialectics (certainly, beyond the problem of living beings) and Aristotle’s theory of organism (and revived by the Bio-cosmological stance of Konstantin Khroustski) are supplementary scientific events we all may enjoy of.

Ana Bazac