

## **Gregory Rupik: *Remapping Biology with Goethe, Schelling, and Herder. Romanticizing Evolution***

184 Pages, 4 B/W Illustrations, 2024 by Routledge, ISBN 9781032582795

<https://doi.org/10.4324/9781003441809>

This is an original manuscript of an article published by Taylor & Francis in *International Studies in the Philosophy of Science* on 11 Nov. 2024, available at: <https://doi.org/10.1080/02698595.2024.2426193>

In an essay on “Goethe’s Concept of Nature” from 1949, Ludwig von Bertalanffy stated a common dissatisfaction with a mechanistic view of organisms, which culminated in the call “Back to Goethe!”. Today, as it is becoming increasingly clear that even the Modern Evolutionary Synthesis (MES) of Darwinism and genetics does not provide a satisfactory explanation of life, it was only a matter of time before this call was heard again. The young philosopher and historian of biology Gregory Rupik has not only renewed this call but also extended it to Schelling and Herder. In his new book, he provides an answer that puts the three Romantics on an equal footing with current debates on organismic autonomy, teleology, autopoiesis, processuality, and agency. In five densely and thoughtfully written chapters, Rupik discusses the contributions that Goethe’s concept of metamorphosis, Herder’s ideas on evolution and Schelling’s natural philosophy can make to the current debate.

Rupik’s starting point (Chapter 1) is a critique of the MES with its gene-centrism, its fractionation of biological processes into heritable units, and its mechanicism. Rupik employs the idea that scientific theories are maps that can be used to navigate fields of research, but that there is a danger of “illicit reification”, i.e. of conflating a map with its field. He argues that a reconsideration of Romantic biology can facilitate a “remapping” of biology to promote a more pluralistic and nuanced understanding of the complex phenomena of living things.

In chapter 2, the author emphasizes that, contrary to a common misinterpretation, Romantic biology was not mere metaphysical speculation. Rather, it was both philosophical *and* empirical. Goethe, in particular, claimed that facts and philosophy cannot be separated: “We theorize every time we look carefully at the world. The ability to do this with clarity of mind, with self-knowledge, and with irony, is a skill we will need in order to avoid the pitfalls of abstraction” (p. 23). In this *ironic* attitude, Rupik sees a way to avoid illicitly reifying biological theories. On the positive side, he points out that Goethe developed a special brand of “delicate empiricism” (*zarte Empirie*), which by “carefully, patiently, and gingerly following nature where it leads” (p. 40), “makes itself utterly identical with the object” (as Goethe phrased it).

In chapter 3, Rupik delves into Goethe’s idea of metamorphosis and its historical background. He shows that Goethe and his friends replaced the static concept of nature as the product of a metaphysical creator with their understanding of nature as active productivity. Schelling saw nature as inherently creative and understood human reason as its conscious manifestation, allowing the investigator to intuit nature’s productive principle from within. Herder in his *Ideas for the Philosophy of the History of Humanity* (1784) developed a sweeping vision of nature’s change during history, while Goethe was more inclined to empirical studies. However, Goethe’s *Attempt to Explain the Metamorphosis of Plants* (1790) is not merely a botanical study, but appears as a telling example of the Romantic’s dynamical world-view.

Goethe understood morphology (a term coined by him) not only as the study of forms, but of their *formation*. Following the metamorphosis of a plant’s leaves into calyx, petals and fruits with delicate empiricism allows the researcher to conceive of an organism as a process and to intuit its metamorphic principle, Goethe’s proteic “leaf”. Goethe has often been interpreted – and dismissed – as an idealistic typologist. Rupik, however, proposes an alternative understanding of this notion by showing that

Goethe's types are no static schemes, but dynamic, integrated "time forms". They certainly are idealistic concepts, but they "share the metaphysical qualities of the organisms from which they are derived, namely their active productivity" (p. 75). Rupik thus interprets Goethe's "Urpflanze" as the lawful temporality of its development and explains the *Metamorphosis of Plants* as "an entryway into an experience of organisms' processual reality" (p. 72). In a Goethean philosophy of biology "life itself can be conceived of as a single, unified form playing out through time", which Rupik appealingly compares to a musical theme: The succession of the leaves to a monophonic melody and the calyx and petals to a symphony of harmonious chords. The plant, he cites the philosopher Ronald H. Brady, "is becoming other in order to remain itself" (p. 73).

Chapter 4 focuses on what the author calls "metamorphic organicism": Essential features of the organism and the Romantic's methods of recognizing them. Rupik describes those features as (i) "metamorphosis" – the never-ending process of self-organization, (ii) "situated drive" – the activity through which organisms create and maintain themselves in constant negotiation with their environment, and (iii) "dynamic unity" – the integration of more or less independent organs into a unified whole. The Romantics came to understand these features by pursuing a constructive, genealogical method. Goethe started from partial views of organic phenomena, proceeded to contiguous series of similar forms in various circumstances and was finally led to intuit the archetypal phenomenon which strings the phenomena together "like Ariadne's thread" (p. 119). In this way, Goethe reproduced within his imagination the productive activity of the organism itself. Rupik thus provides a concise description of how Goethe's method of *zarte Empirie* "makes itself utterly identical with the object, thereby becoming true theory" (as Goethe wrote).

This point is one of the most innovative of the book, because it answers the old quest not only to postulate organic forces, but to observe them empirically. Through a mentally constructive process which is led by empirical data, scientists can "experience in their mind's eye" the dynamic whole of the organism and attain a "glimpse at nature's own constitutive concept" that guides the production of the phenomenon in its various manifestations (p. 92). Such concept is not an abstracted idea, but rather the mental *experience* of the organism's processual metamorphism, adaptive autonomy, and purposively unifying parts-whole relation.

Rupik concludes chapter 4 with a sketch of the impact of metamorphic organicism on the philosophy of biology up to the present day. He mentions various lines of thought, but unfortunately overlooks an important current of Goethean science, which refers to the Austrian philosopher Rudolf Steiner. Steiner, who was the first editor of Goethe's scientific writings (in Kürschner's *Deutsche National Litteratur*, 1884–1897), analyzed and explained Goethe's method and its philosophical implications in detail. Rupik mentions some authors who philosophically referred to Steiner, but others who have practically applied Goethe's method in botany, zoology and evolutionary biology (Bockemühl, Grohmann, Kipp, Kranich, Schad, Suchantke, to name but a few) remain unnoticed. These authors produced a wealth of research results which are impressive demonstrations of the fruitfulness of Goethe's metamorphic organicism. However, they are hardly known beyond narrow circles and not mentioned in other historical and philosophical monographs on Goethean science. On a positive note, Rupik's book might help to promote acceptance and understanding of their work.

To me, the most interesting chapter is the last, fifth one, not because of what it shows – namely how metamorphic organicism aligns with the Extended Evolutionary Theory –, but because of what it does not show (but nevertheless tentatively indicates). Here, Rupik refers to Denis Walsh, who conceives of organisms as active agents which creatively coped with changing environmental conditions, thereby causing their evolutionary change. Walsh compares evolution to the agential metamorphosis during development. For him, evolution is "development writ large" (p. 138). However, according to Goethe, developmental metamorphosis is a phenomenal expression of a proteic archetype and its lawful manifestation (e.g., the "leaf", which expands and contracts in the metamorphosis of plants). It therefore remains an open question how evolutionary theory can be aligned with Goethe's intuited idea.

Throughout the book, Rupik shows that Goethe did not pursue a theoretical explanation of the formation of plants and animals, but “patiently and gingerly” engaged in reading the phenomena, finally arriving at an experiential “glimpse at nature’s own constitutive concept”. Transferring this notion to evolutionary change would mean to consider evolution as a metamorphic process. Such an approach would require “reading” the evolutionary changes of organisms like Goethe read the changing organs of the plant. If an archetype of evolution could be found, no further explanation would be needed, because the phenomena would “speak for themselves” (p. 141). This interesting point and its metaphysical implications certainly warrant further discussion.

In summary, Rupik’s modest and well-balanced book is an important achievement. While biology has been dominated by abstract population thinking and technical gene-centrism, the book opens a door to a new way of looking holistically – or better – *realistically* at organisms. This approach does not have to deconstruct or destroy its living objects, but nevertheless is methodologically clear and scientifically sound. Thus, instead of von Bertalanffy’s claim “Back to Goethe”, Rupik’s suggestion to remap biology could be pursued under the motto “Forward to Goethe!”.

Christoph J. Hueck  
Akanthos Academy  
Zur Uhlandshöhe 10  
D-70188 Stuttgart, Germany  
[hueck@akanthos-akademie.de](mailto:hueck@akanthos-akademie.de)

<https://orcid.org/0009-0008-2513-1919>

Limited number of free copies available:

<https://www.tandfonline.com/eprint/ZA8XYSCPSYPPMCBUAZCF/full?target=10.1080/02698595.2024.2426193>