

## Approaching the emergent conception of life

Stanisław Zięba, *Życie. Koncepcja emergentystyczna* (ang. *Life: The Concept of Emergence*), PWN, Warszawa 2013, ss. 390.

Recently, the idea of emergence arouses a lot of interests of scholars in many fields of science. The reason behind this is – among other things – the development of research on nonlinear systems, the chaos theory and the complexity theory. Despite this fact, in the Polish literature one cannot find too many books on the topic in question. The most renowned publications are: post-conference publication *Structure and emergence* (2006) edited by Michał Heller and Janusz Mączka and *Between the reduction and emergence: The dispute over the place of the mind in the physical world*

(2009) by Robert Poczubut. *Life: The Concept of Emergence* by Stanisław Zięba is another book on this topic.

Stanisław Zięba has been conducting his research for many years. The area of his interests includes ecology and issues concerning living beings. In his ecological researches, he focuses on the history of ecology, the methodology of ecology and the humanistic ecology. In his research concerning living beings, his main subjects of interest are the nature, origin and the organization of life. He is the author of many books and articles in this field. Among the most important scientific publications are: *The Development of Mechanistic Conception of Life in the Twentieth Century French Literature* (1986), *Dilemmas of Environmental Safety* (1998), *Nature and Man in the Humanistic Ecology* (1998), *Forest Ecosystem like*

*a Human Value* (2002), *History of Ecological Thought* (2004), *Perspectives of Human Ecology* (2008).

His most recent book, *Life. The Concept of Emergence*, refers to the themes that have been raised in the already mentioned *The Development of Mechanistic Conception of Life in the Twentieth Century French Literature*, *Nature and Man in the Humanistic Ecology* and *Perspectives of Human Ecology*. Its title suggests that the concept of life is analyzed from the emergent point of view, which is somewhat misleading. While the problem of life is indeed the main theme of the book, the emergent approach is largely presented in the last chapter. The Author claims that in his next book he plans to address this topic in a more detailed manner. The reviewed book focuses rather on the paradigm shift in the approach to the study of the subject.

Since the approach of reductionism occurs to be insufficient for explaining the life, we need another approach, and emergentism seems to be a good candidate for this task.

The book consists of an introduction, five chapters, conclusions and extensive bibliography. In the introduction one can find general information about biotic complexes that exhibit specific nature – they have properties that are not reducible to the relational properties between their parts. There are also presented a number of problems which are unsolvable in terms of extreme reductionism. This lead to the exploration of new research programs, among which emergentism seems to be the most promising one.

The first chapter entitled “Life in the presence of assumed epistemological and methodological strategy” includes the reflection on the relationship between

science and the knowledge of life. It refers to the problems with the methodology of science and provides general historical perspective of the knowledge of life – from Aristotle to modern times. It also underlines the strong relationship between understanding of biotic systems and methodology of science. On the basis of these considerations, the Author decides to deal with emergent and interdisciplinary approach.

In the next chapter, “Life as structural and functional complex”, the Author reveals the current attempts to build a systemic and comprehensive view of the nature. He focuses on two categories: the system and the complex, which are fundamental in the context of the problem of life and forms of living. With regard to these categories such concepts as complexity, organization, order, disorder, coincidence and necessity are also discussed. According

to the Author, if one aims to analyze the concept of life in systemic and comprehensive manner, the category of coincidence (and, consequently, of determinism) should be discarded.

The third chapter, „Life as an interdisciplinary problem” presents the concept of life from the physical and biological point of view. It reveals that the choice of the physical and biological facts that are meant to explain life is still under question and their interpretation depends on the adopted vision of the world.

In the fourth chapter, “Life as a property of reduction element”, the Author describes paradigm shift from extreme reductionism to moderate reductionism. The latter allows not only for physical interactions, but also for biological ones.

The last chapter – “Life as an emergent property” – is devoted to the concept emergence

as a research strategy. Its application allows the explanation of distinctiveness of biotic structures, their properties and functions. The Author also describes different interpretations of the concept of emergence. In the conclusion, he announces his plan to develop his analysis in his further publications. The book ends with extensive bibliography.

The big advantage of the book is the usage of extensive bibliography, especially the French-language literature, which is rarely cited by scholars who deal with the idea of emergentism. Almost one half of the literature was published in the 21st Century. In each chapter the Author refers to researches in biology, physics and philosophy that are more or less related to the subject. Nevertheless, these works are cited without comprehensive pres-

entation of their backgrounds, which could be inconvenient for the reader who is unfamiliar with problem in question. The Author briefly comments on the views of scholars he refers to and rises his own philosophical questions leaving them unanswered. These questions appear throughout the whole book which shows that there is still a lot to be done in the discussed topic.

It can be said that the book fulfills its task to serve as an introduction to the analysis of life in terms of the concept of emergence. This analysis - according to the announcement of the Author - will be developed in more detail in his next book. Moreover, frequently cited literature helps the reader to delve into the issues of life and emergentism.

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