

Kosmos, dem wir selbst angehören und in den wir als Naturwesen unaufhebbar eingeordnet bleiben" (200) usw.

Allerdings wird dieses metaphysische Fundament nirgends näher dargestellt. Dieses letzte Kapitel bringt eine gewisse Ratlosigkeit zum Ausdruck. Man fragt sich, weshalb der Autor diese Ratlosigkeit nicht explizit zum Thema gemacht hat. Wer wird von einem Philosophen heute verlangen können, daß er eine umfassende, in sich stimmige Metaphysik entwickelt, dazu imstande, die Pathologien der Moderne glatt aufzulösen? Würde man nicht eher skeptisch gegenüber einem solchen Anspruch sein und haben Rapps Überlegungen nicht auch sonst ihre fraglosen Verdienste, wenn sie mutig und ohne Rücksicht auf den Zeitgeist und auf eine allzu akademisch gewordene Philosophie Pathologien der Moderne namhaft machen, deren Anblick wir uns so gern ersparen.

Hans-Dieter MUTSCHLER

Dominique LAMBERT, René RESÖHAZY, *Comment les pattes viennent au serpent. Essai sur l'étonnante plasticité du vivant*, Paris 2004, 412 p., Flammarion. Collection: Nouvelle bibliothèque scientifique.

The general ideas of this book are of double origin. One source is akin to the relatively recent current of biological thought named Evo-Devo. Second source belongs to a more ancient French philosophical tradition represented, among others, by Bergson and Pierre Teilhard de Chardin.

Few words about the Evo-Devo research program. Its creation was prompted by the analysis of the developmental processes in the embryos of different species. About fifteen years ago some discoveries related to the dynamics of the embryological development demonstrated a striking structural identity/stability of homeoboxes in different living forms. Homeoboxes are just small genes (only 180 base pair long) determining a strictly specific aminoacid sequence of short polypeptides (only about 60 aminoacids long) which „act” like hormones, „regulating” the dynamism of the gradually developing body. The parentheses were used deliberately, to stress the *arbitrary* character of the „signalling”.

It was shown, for instance, that the HOX cluster of such small genes, first discovered in the *Drosophila* fruit flies, is not only indispensable during the process of shaping the body of the adult fly, but – what a paradox – is almost undistinguishable from the HOX cluster found in mouse and in *Homo sapiens*. In other words during embryogenesis the almost identical molecular signals „produce” quite different effects in a range of the apparently unrelated forms of life. „Signals”, however, should not be mistaken for „producers”. An alarm clock, for instance, gives an acoustic signal to select a specific moment of time. It may be related to different activities, as for instance, jumping out of bed, making a phone call, or pulling out a cake from the oven. The signal has no intrinsic „power” to determine the nature of the dynamism it „prompts”. Its acoustic energy is unable to impose a definite structure on the „product”. An intermediary mechanism, a living being, a man is necessary to „decipher” the „meaning” of the signal and to execute such or another formative activity.

It seems that the Evo-Devo program does not distinguish sufficiently between the „nature of a signal” and the „nature of an embryological development”. One might say, that some currents of biological investigation simply do not distinguish between the „question-rising” elements of the observational or experimental data and the „question-solving” elements of it. This leads to some illusionary explanations, which, at the closer look, reveal the pattern of the ancient error called *petitio principii*. The Evo-Devo program tries to construct a synthesis between some fragmentary and scarce paleontological remains, our present embryological knowledge and the recent discoveries in molecular biology. Without a set of clear analytical concepts relating causal influences with their effects this program does not seem convincing enough.

Let us return to the book written by Lambert and Rezsöhazy. As indicated above the book has „two layers” of ideas. Its empirical, biomolecular layer tends to keep in touch with the details of biomolecular dynamism of the living being on one hand, and to show an evident, persuasive, explanatory power of it. One, however, may wonder to what extent this effort is successful. To illustrate the reasons of our reservations let us concentrate on just two, selected fragments of the biomolecular evidence.

On page 288 the authors invoke a parable of Lego bricks, the parable introduced in 2002 by Csete and Doyle. This parable might have been quite successfully, and appropriately applied to the set of aminoacids (subunits of the functional protein structures). But Lambert and Rezsöhazy have applied this parable to practically all molecular structures of living body, and to all the chemical links observable within the living body. This seemingly excessive generalization emptied the much desired rational meaning of this parable. Extrapolation justified within a certain limit may be unsound without it.

Second example. On the page 31 the authors undertake a detailed analyse of the secondary and tertiary conformation of the functional protein molecules. They invoke Anfinsen’s calculations concerning the necessary constraints required to obtain the proper, specific, three-dimensional shape of every functional polypeptide. One expects that a solution of this enormous problem will be presented. Instead the authors give us a detailed description of the dynamisms leading to the primary, one-dimensional protein structure. In other words to explain how the piece of metal is processed to produce the proper structure of the mainspring in a watch, the production of the pig iron in the foundry is described.

The second layer of concepts explained and exploited in the book is – as it was already mentioned – more philosophical than biological. The main idea permeating the whole discourse seems to be this: The amazing dynamism of living beings is determined by structures – chemical, biomolecular, cellular ... and so on. The description of the biological structures, especially upon the subcellular level provides us, supposedly, with the explanation of main intellectual enigmas. All the numerous examples of biological plasticity find, supposedly, their explanation in the intricate network of biological structures.

The above mentioned premise – „structures ultimately determining the dynamism of life” – does not seem sufficiently proven. Suppose that one puts forward the question: „What is the origin of the dynamism named the

„internet”? Suppose one gives such an answer: „The network of cables and radiotransmitters, together with the structure of all the computers linked to the network gives a satisfactory explanation of the „internet phenomenon”. There are explanations which look like putting a cart before horses.

Some hundred years ago our knowledge concerning the living cell was very limited. A model of a bag filled with the relatively simple organic compounds, random walking in tune with the Brownian thermodynamic model seemed convincing enough. During the following hundred years this idea became absolutely out-dated. Nowadays the immanent dynamism of the living cell seems amazingly logical, non-random, precise, selective – down to the position of single electrons and protons.

Some philosophers believe that this completely new and unexpected idea gives the essentially sound explanation of the „secret of life”, together with its plasticity. Some others claim that this idea requires a restatement of the puzzling element of the „phenomena of life”. Its plasticity only adds a next, higher level to the ladder of intellectual problems raised by our better knowledge of life’s phenomena.

Piotr LENARTOWICZ

Hans-Dietrich MUTSCHLER, *Naturphilosophie*, seria: Grundphilosophie, Bd. 12, Stuttgart 2002, W. Kohlhammer, stron 205. – Polskie tłumaczenie: *Wprowadzenie do filozofii przyrody*, Kraków 2005, WAM, ss. 238.

Prof. Hans-Dieter Mutschler wykłada filozofię w Instytucie Filozoficznym Uniwersytetu w Innsbrucku, w Instytucie im. C. G. Junga w Zurychu, a od 2003 roku także w Wyższej Szkole Filozoficzno-Pedagogicznej *Ignatianum* w Krakowie.

Jak czytamy na czwartej stronie okładki recenzowanej książki, „niezależna filozofia przyrody uznaje wyniki pozytywnej nauki oraz teorii nauki jako refleksji nad nią, zadaje jednak pytanie, czym jest owa przyroda, która jest przedmiotem techniczno-praktycznych i etyczno-praktycznych sytuacji”. Książka składa się ze *Wstępu* i 6 nierównej objętości rozdziałów. Mimo że nosi tytuł *Naturphilosophie*, sugerujący, że jest ona systematycznym wykładem filozofii przyrody, faktycznie stanowi wprowadzenie do tego rodzaju filozofii. Autor przedstawia w niej panoramę współczesnych poglądów na filozofię, szczególnie na metafizykę, i przeprowadza gruntowną ich krytykę. Ogólną tezą autora jest stwierdzenie, że nauki przyrodnicze programowo odcinają się od filozofii, odrzucając szczególnie pojęcie celowości. W praktyce jednak posługują się terminologią teleologiczną, w czym ujawnia się bądź ich niekonsekwencja, bądź ograniczenie. Autor jest zdania, że w poglądach wielu filozofujących fizyków kryje się niczym nie podbudowany platonizm, i jest skłonny przyznać w wielu przypadkach rację Arystotelesowi, którego w sposób nieuzasadniony współczesnie wielu kwestionuje.

We wstępie H.-D. Mutschler stwierdza, że od XVII wieku utarł się pogląd, jakoby prawo do zajmowania się przyrodą miały tylko nauki przyrodnicze,