

Summary

The result of a collective effort, the book *From an Evolutionary Point of View: the Concept of Evolution in Contemporary Philosophy* maps the uses of the concept of evolution in several areas of the current philosophical thought. Speaking of evolution, we do not mean a vague notion that the world – or life, or mankind – somehow develops, as it was articulated in metaphysical systems of philosophers such as Hegel, Bergson or Whitehead. We mean the notion of “descent by modification” that resulted from empirical discoveries by Charles Darwin and Alfred Russell Wallace. This scientific concept of evolution serves both as a basis of the whole edifice of life sciences and as their universal explanatory instrument. It explains the observed biological diversity, as well as the intricate, seemingly designed, interdependencies amongst biological phenomena. The concept of evolution is thus, at the same time, an instrument of unification in science, capable of connecting an extraordinary diversity of natural phenomena on the basis of a simple pattern or law. In this respect, the concept of evolution resembles that of gravitation in Newtonian physics.

However, the concept of evolution is not only central to the variety of life sciences, but reaches into chemistry and physics – in the border disciplines such as biochemistry and biophysics – that take it at least as an implicit foundation. In the other direction, evolution has recently begun to play an ever more important role in the social and human sciences through sociobiology and evolutionary psychology, which study dissemination and adaptive character of cultural forms.

Finally, philosophy from Popper to Quine and on has developed in the direction of naturalism, and in particular evolutionary natu-

ralism. Biological considerations shape discussions in epistemology, philosophy of mind and consciousness, and in ethics.

The present volume traces the philosophical debates on evolution in three thematic areas, each of which is subdivided into two chapters. Part One, *Science*, aims at a clarification of the Darwinian view of evolution as a science. Tomáš Hříbek devotes the first chapter, “Darwinism and the Forms of Creationism” to a critical analysis of various types of creationist assault on the standard biological theory – from “scientific creationism” (here exemplified in the work of Duane Gish) to “intelligent design theory” (Michael Behe and William Dembski) to subtle forms of creationism in the contemporary Catholic thought (from Teilhard de Chardin to John F. Haught). Hříbek assumes that creationism is scientifically worthless, but a confrontation with its claims and arguments helps refine a number of borderline issues, such as the nature of a scientific theory, the relation between science and religion, and the ontological commitments of science. Hříbek rejects the earlier, single-criterion attempts at demarcating science from non-science (as exemplified, in particular, by Karl Popper). Rather, following the work of Philip Kitcher, he argues for a complex and historically informed demarcation between science and creationism (religion). When it comes to ontological commitments of science, Hříbek argues that science implies a naturalistic metaphysic which excludes supernatural phenomena. On the other hand, naturalism does not necessarily amount to physicalism; in other words, the naturalistic commitment of science does not imply that every natural state and property is a physical state or property.

While the first chapter provides a defense of evolutionary biology so to speak from the outside, the second chapter, “Towards a Universal Evolutionary Principle”, authored by Vladimír Havlík, analyzes the foundations of Darwinian science from the inside of this discipline. The chapter is an example of applied naturalistic philosophy. It employs conceptual tools of philosophy in the project of clarification, grounding and extension of the fundamental concepts of a particular science – viz., evolutionary biology – such

as evolution and evolutionary principles. Havlík argues that the evolutionary process is not limited to the organic world of living creatures and that biological evolution is but a special instance of a universal evolutionary mechanism which will occur whenever its basic preconditions are satisfied. In accordance with this assumption, Havlík articulates a universal evolutionary mechanism which should make room for all so far known as well as yet unknown instances of evolution. The proposed formulation of these universal principles draws on the theory of a universal evolutionary change (Donald Campbell), the earlier attempts at axiomatizing Darwin's theory (Mary B. Williams) and its general principles (Philip Kitcher), the concept of universal Darwinism (Richard Dawkins, Daniel Dennett and Henry Plotkin), as well as the idea of a general form of selectionist processes (David Hull). As a preliminary to the formulation of the universal evolutionary principles, Havlík offers clarifications of the basic concepts such as genotype, phenotype, replicator, vehicle, and interactor, of the elements of an evolutionary process, and of the units of selection. One of the contentions is that an adequate formulation of universal evolutionary principles requires a weakening of Dawkins' genocentrism. Other levels of reality in addition to the biological one can include various sorts of entities that play the role of a replicator, and thus become the basic entity at a given level of the evolutionary process.

The next two chapters form Part Two, *Mind and Morality*, which concerns the evolutionary philosophy of mind and ethics. In chapter three, "Naturalizing the Conceptual Content", Juraj Hvorecký discusses several attempts at employing evolutionary biological notions in the naturalization of intentional or semantic content. Hvorecký approaches these theories as instances of a single project of the naturalization of the mind, i.e. of finding a room for the mind in the world which is ultimately physical. Three theories of naturalizing the content are discussed: Ned Block's semantics of causal roles; Jerry Fodor's theory of asymmetrical dependence; and three versions of teleosemantics, which applies Darwinism in philosophy of mind (Daniel Dennett, Ruth Millikan and David

Papineau). The first two naturalistic programs serve as a necessary background against which to understand the efforts of the three teleosemanticists. The shared feature of teleosemantic theories is that they identify mental content in terms of an evolutionary history of the psychological subject. If we wish to find out what the concepts employed by a given subject are about, we must look at their selectionist history, a part of which is the role these concepts played in the lives of countless generations of the given subject's ancestors. While recognizing the promise of teleosemantics, Hvorecký also voices a critical note that the Darwinian semantics of the mind overemphasizes the consequences of content at the expense of the causal connections to the object represented by the contentful mental state.

A different type of naturalization is pursued in evolutionary ethics, which is the topic of the fourth chapter, "Evolution of Morality", authored by Tomáš Hříbek. If we take for granted the evolutionary origin of human beings, including their psychological and behavioral dispositions, then it appears that morality should have an evolutionary origin as well. However, if we regard altruism – i.e., the capacity to give up certain advantages in favor of other individuals – as the core of moral conduct, then it seems that altruism could not have resulted from natural selection. The process of natural selection appears to be about the survival of the fittest, in which considerations for fellow creatures decrease one's own fitness. In other words, altruism appears to be evolutionarily counterproductive. Hence, the origin of morality is either incomprehensible, or supernatural. Hříbek attempts to show that both conclusions are premature. Three areas of inquiry in a Darwinized ethics need to be distinguished. The earliest project, which can be traced in the works of Herbert Spencer and other Victorians, is prescriptive. It attempts to derive normative conclusions from (often questionable) notions about the character of evolutionary process. Although the prescriptive project still suffers from its early acquired bad reputation, there are contemporary versions of this approach, some of which are critically analyzed in the present chapter. However,

behavioral scientists as well as philosophers pay more attention to the study of descriptive evolutionary ethics – i.e., attempts to show that altruism could have resulted from natural selection after all. The third area of activity in the Darwinian ethics is metaethics, which primarily deals with the question of whether evolutionary origins of morality lend it safe foundations, or, on the contrary, undermine its validity. Hříbek inclines toward the conclusion that the objectivity of moral commitments is not threatened even by an admission that Darwinism leads to a certain kind of moral antirealism (Richard Joyce).

The final part of the book, Part Three, entitled *Knowledge*, comprises two chapters on evolutionary epistemology. Jiří Nosek, author of the fifth chapter, “Evolutionary Epistemology and Transcendental Arguments”, discusses the relative merits of transcendental epistemology and evolutionary epistemology. While sharing a broadly naturalistic point of view, Nosek is critical of stronger versions of naturalism, such as represented, in the present volume, by Hříbek and Hvorecký. Accordingly, Nosek wishes to articulate a space for a more traditional, transcendental epistemology, alongside naturalistic evolutionary epistemology. As representatives of evolutionary epistemology, Nosek concentrates on the work of several philosophers, such as Gerhard Vollmer, Nicholas Rescher and Michal Ruse. While for Ruse, transcendental considerations have no place in evolutionary epistemology and Kant is foreign to Darwin, Vollmer’s version of evolutionary epistemology replicates both the structure and issues of the Kantian theory, in particular the issue of the objectivity of our knowledge. This objectivity is secured by the fact that our epistemic talents are adaptations; had our knowledge of the world been inadequate, our ancestors would not have survived and left offspring. Finally, Rescher offers a naturalized transcendental argument, in which he infers from the features of our cognitive procedures to the features of the world. Nosek then argues that Kant’s transcendental epistemology plays a different role from evolutionary epistemology, which is an interdisciplinary theory combining the results and methods of various sciences. In particu-

lar, Nosek rejects attempts at naturalizing the transcendental concepts of a priori and a posteriori; he believes that an assimilation of epistemology with biology by means of these concepts does not help solving the problems of epistemology. He concentrates on properties that distinguish the uses of transcendental argumentation vis-à-vis evolutionary theory: its functionality, validity, normativity, circularity, and significance. The role of transcendental argumentation consists in explication; the role of evolutionary epistemology in explanation.

The theme of evolutionary epistemology is continued in the final, sixth, chapter, “Popper’s Darwinian Epistemology”, in which Zuzana Parusniková concentrates on the work of perhaps the key evolutionary epistemologist – Sir Karl Popper. He developed a Darwinian theory of the growth of knowledge. While praising the novelty and fruitfulness of Popper’s vision of the links between biological and cognitive evolution, Parusniková – in agreement with Popper’s own calls for criticism – points out the problematic features of Popper’s project. In particular, she draws attention to Popper’s tendency to erase differences between organic and cognitive evolution. Popper attempted to connect the two by means of a concept of behavior in the context of his theory of three worlds. However, Popper does not solve various problems in the area of the evolution of knowledge. Furthermore, his theory is ridden with an internal inconsistency: according to his notion of progress, criticism should grow stronger at the expense of dogmatism, and yet dogmatism remains a powerful instinctual force in his theory. Popper thus does not provide an adequate theory of the growth of knowledge.

In conclusion, while the authors of the volume *From an Evolutionary Point of View* do not necessarily agree on each issue – whether it is the possibility of universal Darwinism; the clear demarcation between the Darwinian science and the creationist pseudo-science; the plausibility of a naturalistic, in particular teleological, project in theory of the mind; or various forms of evolutionary epistemology – they do agree that the Darwinian solutions have begun to proliferate in social as well as natural sciences, so that it is possible

to speak of establishing a new paradigm in the Kuhnian sense of the term. Moreover, this new paradigm is affecting philosophical reflection as well, which is what the authors of this book wished to convey in their individual chapters.

Translated by Tomáš Hříbek