



Evolution: As I See It

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EVOLUCE: Z MÉHO POHLEDU

ABSTRAKT Existence evoluce má dalekosáhlé a dlouhotrvající důsledky pro vědu, dopady na filozofii a konsekvence v teologii. Náš moderní pohled na svět je dynamický, vědecký a založený na vše prostupujícím naturalismu. Jedinečnost této planety, tedy život na zemi a existence našeho vlastního druhu, čelí s pokračujícími objevy přírodních věd velkým výzvám. Podle mého názoru představuje člověk v toku a nezměrnosti tohoto vesmíru nedávnou a zranitelnou organickou formu.

KLÍČOVÁ SLOVA antropologie; kosmologie; evoluce; exo-evoluce; integrita; naturalismus; vyšší bytosti; teleologie

ABSTRACT The fact of evolution is having far-reaching and lasting implications for science, ramifications for philosophy, and consequences for theology. Our modern worldview is dynamic, scientific, and grounded in a pervasive naturalism. The uniqueness of this planet, life on earth, and our own species is seriously challenged by ongoing discoveries in the sciences, ranging from astronomy and geopaleontology to biology and anthropology. As I see it, the human being represents a recent and vulnerable organic form within the flux and immensity of this universe.

KEY WORDS anthropology; cosmology; evolution; exoevolution; integrity; naturalism; overbeings; teleology

INTRODUCTION: EARLY THOUGHTS

Among the Presocratic philosophers, several of these early naturalist cosmologists anticipated the evolutionary framework in their ideas about a dynamic universe. Unfortunately, Aristotle (384–322 BCE) presented a comprehensive worldview that disregarded all previous proto-evolutionary concepts. Instead, this impressive Greek philosopher argued for the eternal fixity of all species within a static interpretation of the great chain of being or ladder of nature. His own thoughts on teleology and essentialism dominated Western natural philosophy for many centuries.

However, the pivotal writings of Charles Darwin (1809–1882) presented his scientific theory of organic evolution by natural selection grounded in empirical evidence and rational thought. In retrospect, he realized that his five-week visit to the Galapagos Islands in 1835 had convinced him of the historical web and enormous diversity of life forms on this pla-

net. Darwin was able to persuade important naturalists (e. g., Thomas Huxley in England and Ernst Haeckel in Germany) that the idea of evolution is a brute fact of the organic world. In particular, his conceptual revolution in terms of biological evolution had far-reaching consequences for understanding and appreciating the recent place of our own species within earth history and this immense cosmos.

With dynamic integrity, Darwin had challenged the traditional view of life on this planet. His major book *On the Origin of Species* (1859) remains one of the most significant works in the history of science. Its influence is pervasive not only in biology, but also in all the special sciences, natural philosophy, and process theology.

As I see it, Darwin's contributions to science are exemplary of the quintessential value of the scientific method, a critical imagination, and open inquiry. They established a sweeping and rigorous naturalism within which one may seriously examine and continuously interpret the ongoing flux of material reality.

SCIENTIFIC IMPLICATIONS

From astronomy through biology and anthropology to psychology, the modern evolutionary framework has changed forever how enlightened thinkers view this universe, life on earth, and our own species. Both natural and social scientists must now take the fact of evolution seriously. This evolving and expanding cosmos is about 15 billion years old; a startling age that Darwin himself could never have imagined. Overwhelming and convincing evidence from geology, paleontology, and archaeology argues for a planet about 4.6 billion years old, the mutability of species over vast periods of time, and the great antiquity of the human animal, respectively.

The far-reaching scientific implications of organic evolution were acknowledged by Thomas Huxley and Ernst Haeckel, even before Darwin published *The Descent of Man* (1871). All three naturalists anticipated that fossil evidence would substantiate extending the evolutionary theory to include the human animal and its relationship to the other primates. Grounded in random genetic variations, the explanatory principle of natural selection, and dynamic gene pools, neo-Darwinism offers a more comprehensive and scientific look at the origin, evolution, and extinction of life forms on this planet.

In the last century, throughout his long academic career, the Harvard biologist Ernst Mayr (1904–2005) championed this new synthesis in organic evolution. Recently, the bold writings of Oxford biologist Richard Dawkins clearly offer the scientific evidence for the evolutionary outlook and answer those challenges brought against the fact of evolution by its myopic and uninformed critics.

Embracing the factual theory of organic evolution, the discipline of anthropology places the human animal within the primate order and acknowledges the close relationship between our species and the four great apes or pongids (orangutan, gorilla, chimpanzee, and bonobo). Anthropologists also recognize social change and cultural evolution. Of particular importance are scientific speculations on the emergence of bipedality, the making and use of implements, and the origin of symbolic communication as articulate speech. However, within the evolutionary perspective, neither walking erect nor making tools/weapons or using vocalizations separates the human being from the other primates.

As I see it, in the sciences, Darwinian evolution has replaced Aristotelian philosophy; change has replaced fixity. Reality is in continuous flux, from the distance stars above to those life forms that have lived and are living here on earth.

PHILOSOPHICAL RAMIFICATIONS

Since the writings of Darwin, several major thinkers have grappled with the awesome philosophical ramifications of the fact of evolution. Concerning evolutionary viewpoints, the arc of interpretations ranges from materialism, through vitalism and spiritualism, to mysticism.

Of particular significance are the works of John Dewey (1859–

1952) and Marvin Farber (1901–1980). Both embraced the evolutionary perspective, acknowledged the advances of the sciences (especially biology and anthropology), and gave special attention to the analysis of values within a naturalist framework. Each respected the use of the scientific method and its indisputable discoveries.

In his 1910 essay, John Dewey emphasized the need for philosophers to take the theory of evolution seriously. He knew that it represented a conceptual revolution that placed the human species within the flux of reality, and that this new worldview would not be accepted easily by many important thinkers. His own philosophical stance called for more science education, as well as an outright rejection of both the traditional mind-body and thought-action dualisms. Dewey's pragmatic naturalism upheld a practical view of the human condition, calling for philosophers to use the scientific method and empirical knowledge in order to help solve those problems that challenge the modern world.

Critical of those phenomenologists who supported a myopic subjectivism, Marvin Farber argued for a comprehensive naturalism. He appreciated the findings of the evolutionary sciences and he saw our species within a cosmic perspective. His insightful writings are refreshing commentaries on the history of ideas and beliefs. Farber found value in the works of such diverse thinkers as Giordano Bruno, Ernst Haeckel, and Karl Marx. His own atheistic worldview has no sympathy for idealism or theism. Briefly, for Farber, the evolutionary movement had swept away all subjective metaphysics in favor of a strict naturalism.

Since the scientific writings of Darwin, one's view of this universe, life on earth, and our own species has been altered forever: change replaces fixity, extinction is a fact of reality, and the human animal has had a long and complex history within organic evolution. All the empirical evidence from astronomy to anthropology supports a pervasive naturalism. Serious thinkers now need to accept this new perspective if their interpretations and worldviews are to be meaningful and true. Modern philosophical naturalists should both enjoy the triumphs of the scientific method and embrace the resultant evolutionary worldview. Hopefully, a neo-Enlightenment is dawning that respects the findings of science, supports the evolutionary framework, and promotes ongoing open-ended inquiry. In the final analysis, one must embrace both cosmic Darwinism and universal humanism.

As I see it, the evolution theory is a fact of reality. One may now speak of the will to evolve through the use of nanotechnology and genetic engineering. If our species does not become extinct, then posthumanists may speculate on the emergence of *Homo futureensis* in the remote ages to come.

THEOLOGICAL CONSEQUENCES

The fact of evolution has had devastating consequences for traditional beliefs and theological systems. For some thinkers, it has necessitated a critical examination of the relationship

between God and this universe. Throughout human history, one may speak of the origin, evolution, and extinction of different religions and their theologies. In the middle of the nineteenth century, Friedrich Nietzsche (1844–1900) even boldly proclaimed that “God is dead!” Since the appearance of Darwin’s scientific theory and Nietzsche’s philosophical insight, new interpretations of God have been offered. They account for this dynamic universe in terms of an ongoing and perhaps endless process of creation, as well as the continuous evolution and extinction of species on our planet.

In 1925, having been influenced by the advances in modern physics and evolutionary biology, Alfred North Whitehead (1861–1947) presented a new cosmology in which both God and the World are endlessly interacting in order to create objective novelty and enjoy subjective satisfaction. He gave priority to describing how entities experience events, deriving feelings from the temporary material manifestations of eternal objects. His process theology was a unique metaphysical attempt to show the need for the existence of God in order to explain creativity and direction within a pantheistic worldview.

In the middle of the last century, the geopaleontologist and Jesuit priest Pierre Teilhard de Chardin (1881–1955) made a bold attempt to reconcile the fact of evolution with the basic teachings of the Roman Catholic Church. In his philosophy, he offered a pantheistic interpretation of the relationship between God and our evolving species within a spiritual universe. Teilhard believed that human evolution would end on the earth at a future Omega Point. At this final end-goal, our species will be mystically united with a personal God; this spiritual event for humankind would take place beyond both space and time. He was forbidden to publish his philosophical ideas and theological beliefs on evolution during his lifetime. His metaphysical worldview has satisfied neither scientists nor theologians, and most philosophers have ignored it.

As I see it, the fact of evolution has had disturbing consequences for religious beliefs and theological systems. One may only speculate on what will become the worldview held by our distant descendants centuries and centuries from now.

CONCLUSION: FUTURE SPECULATIONS

Most scientists claim that this dynamic universe has no pre-established design or order (no meaning or purpose); they do not see a direction in or a goal for the evolving cosmos. Even if this expanding universe is not moving toward a pre-determined final end, one may speak of emerging teleology. Through advances in science and technology, human beings are more and more designing life forms and therefore giving both purpose and direction to biological evolution.

The earth itself is a planetary graveyard of fossils and a global museum of artifacts. For some thinkers, the fact of evolution holds an alarming truth for all living forms, including our own species, as well as this universe: extinction is inevitable within an endlessly changing cosmos. Consequently, the hu-

man animal is merely a fleeting existence in the eternity and the infinity of material reality. Even so, the promise of transhumanism may result in the engineering of our species into a new life form that will enjoy enhanced physical characteristics and mental abilities. I refer to this new species as *Homo futurensis*; a distant form of life as cosmic overbeings who will enjoy existing among the stars.

At present, humankind is experiencing a unique event in its planetary evolution: both global convergence and cosmic divergence are happening at the same time. Going beyond all earth-bound and human-centered frameworks, the emerging modern worldview is grounded in the evolving and expanding material universe. Furthermore, in the posthuman future, enlightened designers may even give our species an indeterminate life span.

If exobiology is true, then exoevolution may have resulted in the existence of life forms elsewhere with superior intelligences and advanced civilizations. Human contact with such extraterrestrial beings would be the most significant event in the evolution of our species.

As I see it, science, philosophy, and theology have enriched our understanding of and appreciation for the fact of evolution. The arc of interpretations, including disciplined speculations, offers views far beyond anything that Darwin himself could ever have imagined.

Today, a comprehensive ultra-anthropology needs to acknowledge the probability that our human species may be a transitory link between the fossil apes of the remote past and the cosmic overbeings of the distant future. The wisdom of evolution teaches us the necessity of adapting to the certainty of change and evolution.

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