

Cosmological Anthropology

Institution: Theological College of Szeged, Szeged, Hungary

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General course description

The course titled “Cosmological Anthropology” belonged to a series of courses in systematic philosophy offered by the Theological College of Szeged and belonging to the introductory phase (first four semesters) of the theological studies here. Among these courses there have been some compulsory ones -- that is, all of our students has had to enroll and get an evaluation in them -- and “Cosmological Anthropology” was one of these. The title of the course was given (alternatives might be “Cosmology” or “Philosophical Cosmology”) according to the traditional fields of systematic philosophy taught at Catholic theological institutions in Hungary and to the prescriptions of the curriculum accepted by the Faculty of Theology of the Pázmány Péter Catholic University in Budapest, of which our College has been an affiliated institution.

However, instead of a simple presentation of Thomistic (or any other) philosophy of nature we took advantage of this course in order to introduce the main topics and questions of the dialogue between science and religion to our students.

We found this important for several reasons. It was an official point of view at the several levels of the Hungarian education system for decades, that scientific and religious thought contradict each other. This point of view had survived the political changes at the beginning of the 90s, and the result was that even most of our students have learned about these topics totally separated, as if there had been absolutely no connection between these two fields of human knowledge. On the other side, religious fundamentalist voices had grown stronger in our country in the same period, which emphasized an antagonism between science and religion on a different background. Therefore, we found it necessary to teach our future theologians and catechists in a way that could contribute to a change of attitude in our society. The course provided an optimal opportunity for showing that there was a fruitful interaction between science, philosophy and religion, furthermore this gave a solid preparation of the later theological studies (especially dogmatics and moral theology) of the participants. This situation and the concept was properly explained to our students in the first introductory lecture.

Description of the individual lectures

Lecture 1 is a general introduction to the philosophy of nature:

1. A brief history and today's trends of philosophy of nature

From Ionic philosophers to the development of modern science; neo-Aristotelian and neo-Thomistic, neo-Kantian, analytic and other approaches in view of philosophy, theory of science and natural sciences. Philosophical Cosmology as a mediator between natural sciences and religious thought through the three stages of experience and reflection. Characteristics of the empiric reflection on nature: a short summary of its methods, the significance and limits of methodological and thematic reductionism. Phenomenological reflection on nature as searching for the proximate philosophical explanation of empiric phenomena. Transcendental reflection of nature as searching for the ultimate explanation of the world of phenomena, based on the general transcendental experience of humans and serving as a bridge to theological and religious world view. [see related items 14, 25 in the reading list]

The course is then divided into four blocks. The first block (lectures 2-5) deals with the scientific (physical, astronomical), phenomenological and transcendental reflections on the lifeless matter:

2-3. Scientific approaches to lifeless matter and of the material world as a whole

The principle of complementarity and the basic unity of matter. General laws of physics (laws of conservation, symmetry, entropy etc.) and their consequences for the structure of matter. Basics of quantum theory, the principle of indeterminacy and the statistical character of scientific laws. The theory of relativity, historical changes in the scientific view of space and time. The evolution of matter, the successive appearance of complex material structures. Physical cosmology: historical development of the cosmological theories; theory of the Big Bang, the Steady State theory, the oscillating model; open or closed universe; questions on the beginning and the end, the problem of singularity; today's standard model of the universe, new theory elements (string, bubble etc. models). [2, 8, 12, 20, 21, 23]

4. Phenomenology of lifeless matter and the material world

The complexity of undetermined matter as pure potentiality and the determining form as intelligible structure; the homonymous usage of the terms "matter" and "energy" in science and philosophy. Extension (co-extension), motion and action as basic traits of material beings in a phenomenological view. Different (mathematical, imaginary, psychical, physical) concepts of space and time, and their contribution to the development of the philosophical concepts. Infinity and illimitedness, several kinds of infinity (actual and potential etc.); infinity of space and time in the philosophical reflection. The contingency of matter; concept of nature and cosmos. [1, 3, 13]

5. Lifeless matter and the material world at the level of transcendental reflection

The difference between the principle of scientific and metaphysical causality. The problem of teleology; questions concerning the anthropic principle. Assertoric and apodictic necessity; connection between contingent and necessary being, the necessary being as the ultimate condition of possibility of contingent material patterns and the evolving cosmos. The "built-in" potential of self-transcendence in all beings.

Consequences for the theological concept of creation and for the theistic thought in general. Critique of fixist creationism and reductionism. [18, 26]

The second block (lectures 6-8) describes the scientific (biological), phenomenological and transcendental reflections on the living matter:

6. Scientific approaches to living matter

Historical development of the scientific description of organic structures and functions. Basics of taxonomy, genetics and molecular biology. Storing and transmitting of information in the living matter. Features of the living organism. Theories explaining the origins and of life: natural versus spontaneous generation; the question of earthly or cosmic origins (panspermatism). The historical development of the theory of evolution: Lamarckism, Darwinism and later theory elements; today's standard theory of the evolution of living beings. Biogeographical, paleontological, taxonomical, anatomical, biochemical and ethological evidences of the process of evolution. [5, 9, 22, 24]

7. Phenomenology of the living matter

Metabolism, augmentation and reproduction as attributes of living beings. Modification of the main features of material bodies in case of living organisms: extension as species-related shape, co-extension as living-space, motion as self-motion, action as self-action. A living being as an end in itself: the concept of entelechy as the biological pattern of matter. Preformist hypotheses of evolution in the philosophical and theological tradition; their relation to transformism. The possible role of regular and coincidental causes in evolution. The problem of increasing probability of more complex structures in the course of the evolution. [1, 25]

8. Living matter at the level of transcendental reflection

The relation between increasing order and entropy. Self-transcendence of the lifeless matter as the proximate condition of possibility of appearance of living organisms in the course of evolution of matter. Teleology as a complementary factor of low probability, the question of directed probability. Cooperation of principle cause and instrumental causes. Necessary being as the ultimate condition of possibility of biological patterns and their evolution. Philosophical and theological reception of abiogenesis. Further consequences for the concept of creation and the theistic thought. [25, 26]

The third block (lectures 9-11) shows the scientific (zoological, ethological), phenomenological and transcendental reflections on the animal life:

9. Scientific approaches to animal life

Empiric examination of animal behavior and psyche; basics of psychophysiology, animal psychology, ethology and other approaches. S-R reactions, unconditioned and conditioned reflexes, chain reflexes and instincts; characteristics of the instinctive

behavior. The sensation of animals; perception, phantasy, memory and evaluative capacities. The appetent behavior of animals, the manifestation of subjectivity in emotions. The motion of animals, the capacity of spontaneity. The social behavior of animals; complex relations between individuals, animal communities and communication. The gradual appearance of the above features and capacities in the course of the evolution. [6, 11, 17]

10. Phenomenology of animal order of being

The animal entelechy as the psychic pattern of matter. Animal consciousness as a consciousness of body and the species-related environment. The characteristics of sensitive cognition; the failing of objectification, abstraction and conceptuality. The beginnings of subjectivity and spontaneity. Modification of the main features of the material bodies in case of animal organisms: extension as species-related shape, co-extension as environment, motion as sensomotorically directed self-motion, action as determined by sensitive striving. Modification of the attributes of all living beings: the characteristics of animal metabolism, augmentation and reproduction. [1, 25]

11. Animal order of being at the level of transcendental reflection

Unreducibility of psychic patterns, critique of the biological reductionism and of a mechanistic (Cartesian) point of view considering animals as machines. Critique of fixist creationism. Self-transcendence of the living matter as the proximate condition of possibility of appearance of sensitive organisms and psychic patterns in the course of evolution. Cooperation of principle cause and instrumental causes in giving rise to sensible beings; necessary being as the ultimate condition of possibility of psychic patterns and their evolution. [25]

Finally, the fourth block (lectures 12-14) discusses the scientific (anthropological, psychological), phenomenological and transcendental reflections on the human life:

12. Scientific approaches to the human life

Empiric examination of the human psyche; basics of human psychology and cognitive science. Characteristics of the human cognitivity and behavior. Social behavior of the man, language and society. Characteristics of the human corporeality, similarities and differences between animal and human body. The origin of human life; the evolution of the hominids and the appearance of the species homo sapiens as a product of the process of hominization, gradual changes in anatomy and mind. [4, 7, 11, 15, 16, 19]

13. Phenomenology of the human order of being

The human entelechy as the spiritual pattern of matter. The characteristics of intellectual cognition; objectification, abstraction and conceptuality. Volitive striving and free self-realization; freedom versus determinism. Human consciousness as self-consciousness; consciousness of the I and of the world. Modification of the main features of the material bodies: extension and co-extension as openness towards the world, motion and action as

consciously planned and purposely directed self-motion and self-action. Modification of the attributes of living beings: the characteristics of human metabolism, augmentation, reproduction, perception and emotions; their cultural and ethical aspects. Spontaneity and creativity. [10, 25]

14. Human order of being at the level of transcendental reflection

Unreducibility of intellectual patterns: the difference between the empiric I and the transcendental I; critique of the biological and psychological reductionism. Transcendental explanation of the evolution of man: complexification and orthogenesis. Cooperation of principle cause and instrumental causes in giving rise to intelligent beings; necessary being as the ultimate condition of possibility of intellectual, spiritual psychic patterns. Special questions: polygenism versus monogenism; the question of generationism (traducianism). Summary of cosmological anthropology: the man in the centre of the dialogue between science and religion. Consequences for a humanized science, further consequences for the theological anthropology and for a religious view of man. [25, 26]

Details of participation and evaluation

The one semester course consisted of 14 lectures (2x45 minutes each, with a 15 minutes break in between).

The evaluation followed on a 5-grade scale on the ground of averaging the results of a written test during the course of the semester (on the topics of the first five lectures) and of an oral or written examination at the end of the semester, based on the material of the compulsory readings (see the marked items of the reading list below).

Reading list

The numbers shown in brackets at the end of the description of the individual lectures above refer to the numeration of the following list, according to the correlation between the contents of the lectures and the books.

Most of these books are available in Hungarian for any student. Not each one of them was compulsory to read, only the related chapters of books number 1, 3, 18 and 25.

ANZENBACHER, Arno: Einführung in die Philosophie. Herder & Co., Wien, 1992. (Hung. transl. 1993.)

BARROW, John: The Origin of the Universe. Basic Books, N. Y., 1994. (Hung. transl. 1994.)

BOLBERITZ Pál: Being and Cosmos. A Christian View of the Material World. Ecclesia, Budapest, 1985. (in Hung.)

- CALVIN, William H.: How Brains Think. Basic Books, N. Y., 1996. (Hung. transl. 1997.)
- CRICK, Francis: Life Itself: Its Origin and Nature. Futura Publications, London, 1982. (Hung. transl. 1987.)
- CSÁNYI Vilmos: Small Ethology. Gondolat, Budapest, 1986. (in Hung.)
- DAMASIO, Antonio R.: Descartes' Error. Emotion, Reason and the Human Brain. Putnam, N. Y., 1994. (Hung. transl. 1996.)
- DAVIES, Paul: The Last Three Minutes. Basic Books, N. Y., 1994. (Hung. transl. 1994.)
- DAWKINS, Richard: The Blind Watchmaker. Longman Group, London, 1986. (Hung. transl. 1994.)
- HAEFFNER, Gerd: Philosophische Anthropologie. Kohlhammer, Stuttgart, 1982. (Hung. transl. 1996.)
- HEBB, Donald O.: A Textbook of Psychology. Saunders, Philadelphia, 1972. (Hung. transl. 1975.)
- HEISENBERG, Werner: Physics and Beyond. Encounters and Conversations. Harper and Row, N. Y., 1971. (Hung. transl. 1975.)
- KANITSCHIEDER, Bernulf: Kosmologie. Reclam, Stuttgart, 1991. (in German)
- KOLTERMANN, Rainer: Grundzüge der modernen Naturphilosophie. Ein kritischer Gesamtentwurf. Knecht, Frankfurt a. M., 1994. (in German)
- LEAKEY, Richard E. & LEWIN, Roger: Origins. MacDonald and Jane's, London, 1979. (Hung. transl. 1986.)
- LEAKEY, Richard: The Origin Humankind. Basic Books, N. Y., 1995. (Hung. transl. 1995.)
- LORENZ, Konrad: Über tierisches und menschliches Verhalten. Piper, München, 1970.
- _____. Methods of Approach to the Problems of Behavior. Academic Press, N. Y., 1960. (Hung. transl. 1977.)
- NEMESSZEGHY Ervin: The Material World. Rome, 1982. (in Hung.)

PASSINGHAM, Richard E.: The Human Primate. Freeman & Co., Oxford, 1982. (Hung. transl. 1982.)

PENROSE, Roger: The Emperor's New Mind. Concerning Computers, Minds, and the Laws of Physics. OUP, Oxford, 1989. (Hung. transl. 1993.)

SIMONYI Károly: The Cultural History of Physics. Gondolat, Budapest, 1978. (in Hung.)

STORCH, Volker & WELSCH, Ulrich: Evolution. Tatsachen und Probleme der Abstammungslehre. Deutscher Taschenbuch Verlag, München, 1973. (Hung. trans. 1995.)

TELLER, Edward & TELLER, Wendy & TALLEY, Wilson: Conversations on the Dark Secrets of Physics. Plenum, N. Y., 1991. (Hung. transl. 1993.)

TÓRŐ Imre (ed.): The Basics of Life. Gondolat, Budapest, 1989. (in Hung.)

TURAY Alfréd: Cosmological Anthropology. Theological College of Szeged, Szeged, 1987. (in Hung.)

WEISSMAHR Béla: Philosophische Gotteslehre. Kohlhammer, Stuttgart, 1983. (Hung. transl. 1996.)