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Walery Goetel and the Idea of Sozology

Walery Goetel i idea sozologii

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Abstract

The article presents the concept of sozology, formulated by Walery Goetel in the 1960s, an innovative proposal to establish an autonomous and interdisciplinary branch of science concerning the protection of the environment. The essence of this idea was to determine the subject matter of the postulated branch science that would include the protection of the natural environment as well as the social environment, which was a major breakthrough and is now an indisputable axiom of ecology, ecophilosophy, the study into the protection of the life of human environment, and the idea of sustainable development. Furthermore, the text contains a short biography of the Polish scientist and presents the reception of Goetl in modern Polish *ecological* thought in the form of systemic sozology and sozophilosophy.

Keys words: ecophilosophy, ecology, nature, protection, sozophilosophy, sozology, systemic sozology, environment

Streszczenie

Artykuł prezentuje sformułowaną przez Walerego Goetla w latach 60. XX w. koncepcję sozologii – nowatorską propozycję ustanowienia autonomicznej i interdyscyplinarnej nauki o ochronie środowiska. Istotą tego pomysłu było określenie przedmiotu postulowanej nauki obejmującego ochronę nie tylko środowiska przyrodniczego, ale także i społecznego, co stanowiło prawdziwy przełom a współcześnie jest niepodważalnym aksjomatem ekologii, ekofilozofii, nauki o ochronie życia środowiska ludzkiego, a także idei zrównoważonego rozwoju. Tekst zawiera także krótką biografię uczonego polskiego oraz ukazuje recepcję Goetla we współczesnej polskiej myśli *ekologicznej* w postaci idei sozologii systemowej oraz sozofilozofii.

Słowa kluczowe: ekoflilozofia, ekologia, przyroda, sozofilozofia, sozologia, sozologia systemowa, środowisko

The 20th century was one of the most interesting periods as far as the development of science is concerned. It is enough to mention two fundamental *scientific revolutions* which happened during that time – *information revolution* (which has radically changed the methods of communication and transformed social organization of humanity) and *biological revolution*, spectacularly manifested in medicine and genetics (eg. transplantology, xenotransplantation, in vitro fertilization, research on the genome of various plants, animals, and on human genome; cloning, transgenic research or eugenics pertaining to humans) (Piątek, 2007). A significant distinguishing mark of this period has been the demand for interdisciplinary or multidisciplinary research, an answer to the challenges of always complicated and multidimensional reality, as well as an attempt to impart a homogenous and integrated character to science (Kamiński, 1981, p. 244-258). Such approach resulted in the creation of numerous new scientific disciplines both in natural history (e.g. bionics or cybernetics), humanities (e.g. family science or European studies), but also on the intersection of these areas of science (e.g. sociobiology).

A classic example of this last trend is ecology – the science of the environment. Invented by Haeckel (1869) as a biological subdiscipline, dealing with the relationships between animals and their environment, in the course of the 20th century ecology evolved into an interdisciplinary science reflecting on mutual influence of living organisms (including

humans) and both natural and social environment (Zięba, 2004). Wide understanding of ecology, including humanistic perspective, gave rise to different variants of ecophilosophy (ecological philosophy), which together study the areas of human activity particularly connected with socio-natural environment (Dołęga, 2006, p. 17-22; Tyburski, p. 7-15). The most significant element of the *ecological* perception of the world is noticing the negative impact that man has on nature. Degradation of the biosphere, increasing immeasurably quickly since the end of the 19th century, has been the subject of numerous alarming studies which usually concluded with appeals for putting a stop to the overexploitation of natural resources. As a result, in the last decades the idea of *ecodevelopment* was created, followed by the notion of *sustainable development*, which is about restructurization (having in mind the future of humankind) of current human civilization, mercilessly exploitative towards nature, into a society full of reverence for nature (Pawłowski, 2011, p. 1-36; Gawor, 2009, 2010;).

Another important element of an *ecological* view on reality is an axiological perspective that demands to protect nature (Papuziński, 2007; Hull, 2008). It has a long tradition that reaches as far as the antiquity (Pawłowski, 2011, p. 1-2).

The concept of protecting nature first appeared on a socially larger scale only in the second half of the 19th century (symptomatically, A. Humboldt coined the term *natural monument* in 1819). From the beginning of the 20th century, the idea of the protection of the environment was being given legal foundations (first comprehensive acts on protection of the environment were passed in Germany in 1902, France – 1906 and Norway – 1910; in Poland in 1934).

The idea of protecting nature fully entered the public consciousness in the second half of the 20th century. It was in that period when, as the destruction of natural environment progressing for economic reasons was clearly visible, first scenarios began to be created that predicted a disaster for human civilization unless it alters its acquisitive attitude to nature. In this context, the words of U'Thant, the author of an United Nations report from 1969, proved to be significant: *It has become clear that we all live in one biosphere within which space and resources, though vast, are limited* (U'Thant, 1969). Such a viewpoint imposed a necessity for a scientific description of the biosphere subjected to human activities. Such a study would take into consideration a description of the processes taking place in the natural environment, a presentation of the negative influence a man exerts on nature and the ways of preventing ecological disaster. This viewpoint is a basis for modern interdisciplinary environmental science, which combines ecology and natural sciences: physics, chemistry, pedology, hydrology, oceanography, meteorology, biology and geography. It is also a point of departure for formulating foundations of a separate branch of science – environmental protection.

In the abovementioned contexts (interdisciplinarity of scientific research, ecology, the science of environmental protection) a substantial role was played by a Polish scientist, Walery Goetel. He is the author of the concept of a new interdisciplinary science of environmental protection which he named *sozology*.

Walery Goetel (born 14 April 1889, Sucha Beskidzka, died 6 November 1972, Cracow) was one of the lead Polish geologists in the first half of the 20th century. He studied natural sciences in Cracow at Jagiellonian University (1907-10) and in Vienna (1910-12), and that was where he obtained his Ph.D. degree in 1913 writing a thesis about rock formations in the Tatra Mountains (southern Poland). He worked at the Academy of Mining (renamed the Academy of Mining and Metallurgy in 1949) in Cracow in 1920-60 (as a full professor from 1923; performed the function of the rector of the Academy in the years 1945-1950), he became a member of the Polish Academy of Sciences. Goetel conducted his field studies mainly in the Tatra Mountains and in the area around them, as he was a great admirer of this region. For that reason, he was an avid activist of Tatra mountaineering, tourism and mountain sports. In that very place, before the First World War, he began his campaign for the protection of the Tatra nature (from 1913 he was a member of the Tatra Society's Section for the Protection of the Tatra). He cooperated with numerous eminent personalities who shared his fascination with the Tatras and who were the pioneers of the idea of the protection of the environment in Poland: Jan Gwalbert Pawlikowski, a professor of economy at Agricultural Academy in Dublany and a writer (1860-1939; he was the author of the treatise *Culture and Nature*, the first Polish manifesto of the protection of the environment), and professors of Jagiellonian University in Cracow, botanist Marian Raciborski, acknowledged physicist Marian Smoluchowski and botanist Władysław Szafer (1886-1970; he was the editor of a two-volume textbook *The Protection of Nature and Its Resources. Problems and Methods*, Warsaw 1965). Szafer, Goetel and Pawlikowski were co-originators of the Ligue of Nature Conservation (1928).

From 1922, Goetel was a member of the State Commission for Nature Conservation (Państwowa Komisja Ochrony Przyrody, PKOP), transformed in 1925 into State Council for Nature Conservation (Państwowa Rada Ochrony Przyrody, PROP); from 1925 he was a representative of PKOP (later PROP) for establishing national parks (designed to be set up in the Tatra Mountains, Pieniny Mountains and on Babia Góra Mountain). He was actually the initiator of the idea of creating such parks. He significantly contributed to combining the questions of

nature conservation both with science and with tourism within Polish Tourist and Sightseeing Society. From the moment of the creation of Tatra National Park in 1955 he was a member of its council and in the years 1956-72 the chairman of the council.

In the interwar period, Goetel extended the activities for the nature conservation in the Tatras to the idea of protecting the environment on an international scale. He was one of the initiators and implementers of the project to broaden the old idea of nature conservation and include simultaneous protection of natural resources which consisted in their rational exploitation. He proposed this fully formed concept at a conference on nature conservation in Brunnen in Switzerland. At the conference, together with Szafer they presented a project to set up an international organization that would encompass a wide scope of the protection of the environment. As a result, the International Union for Conservation of Nature in 1948 was formed, renamed International Union for Conservation of Nature and Natural Resources in 1956 in Edinburgh, which is still functioning with its head office in Switzerland. It is the first pro-ecological organization of an international scope (Wikipedia, 2012).

From the point of view of the history of ecological thought, Goetel's most significant achievement was the formulation in the mid-1960s of a project of a new scientific discipline that would deal with widely understood nature conservation. As he wrote modestly (Goetel, 1966, p. 480), he was not alone in the undertaking; he mentions Adam Wodziczko (1887-1948), Włodzimierz Michajłow (1905-1994) and Władysław Szafer as Polish naturalists who called for making research on nature conservation a separate branch of science (Wodziczko, 1933, p.89-96; Michajłow, 1958, p. 533-536). He was the author of an outline of the subject and the methodology of this new science concerning the protection of the environment, as well as the originator of the term *sozology* (formed from the Greek word σωζό; *sodzo* = protect, rescue, save, help).

Goetel was aware of the fact that the question of the creation of a new science dealing with the protection of the environment *was in the air*. He wrote: *it should be taken into account that the question of the protection of natural resources and securing the stability of their use will grow to become one of the major problem of human life, and that a new branch of science dealing with these issues will develop* (Goetel, 1971, p. 20). He was the first to propose o project of such a science, although soon after numerous similar propositions appeared abroad, under various names: sozoecology, chorology (from Greek *oros* = land, space), sozonomy (science concerning the man and economy) or synecology (Goetel, 1971, p. 18-19).

The idea of creating an autonomous science concerning the conservation of nature first appeared as a careful assumption in Goetel's article *New Ways of Conserving Nature* in 1949. It was introduced in more detail in the text *For the Stability of Use of Natural Resources* in 1963. It was fully expounded in an essay *Sozology – the Science Concerning the Conservation of Nature and Its Resources*, published in 1966. The concept of new environmental science was most fully expressed in the publications from 1971: *Sozology – a Branch of Science, Its Content and Objectives* and *Sozotechnology* (Goetel, 1949; 1963; 1966; 1971). Another factor considerably important for the formulating the project of sozology was the Seminar of the Conservation of Natural Resources and Securing the Stability of Their Use, which Goetel taught from 1963 at the Department of General Geology at the Academy of Mining and Metallurgy in Cracow.

The concept of sozology has its roots in three fundamental premises.

The first one of them concerned the scope of the traditional idea of the protection of nature, created in the second half of the 19th century, which consisted in conservational activities and, according to Goetel, was too narrow. In this perspective, rare and unique natural formations were treated as museum objects which needed to be cared for and left intact. The fruit of these activities, highly valued by the Polish scientists, was the creation of National Parks, nature reserves (of wildlife and inanimate nature), numerous natural monuments (peculiar rocks, trees, plants) and the protection of animals and plants which are rare or vulnerable to damage. This direction in conservational activities in face of an unprecedented civilizational development occurring since the end of the 19th century turned out to be insufficient. Goetel pointed to three factors of this development which fundamentally and irreversibly changed the 19th-century status quo of nature: radical population growth, the processes of global industrialization and urbanization. These phenomena have directly resulted in an increasing exploitation of natural resources, dictated by the growing consumer needs and, as a consequence, in the progressing degradation of nature (e.g. in the form of gradual exhaustion of depletable resources, destroying the landscapes in ever-increasing areas, or exterminating numerous species of animals and plants). In this perspective, Goetel found it vital to protect not only the spectacular elements of inanimate nature, flora and fauna, but also all natural resources: water, air, soil, ores and minerals. *What good will bring – he asked rhetorically – the protection of particular elements of nature, when deep changes in human life, and especially the destruction of nature will cover the entire Earth, or even only its particular but vast areas?* (Goetel, 1966, p. 477). In this way, he showed new ways for nature protection that definitely exceeded the scope proposed by the conservational concept.

The second premise for creating a separate branch of science dealing with the protection of the environment was, according to Goetel, the necessity to introduce to the environmental issues a factor which had been overlooked so far – that of human health, to a large extent conditioned by the natural environment. As an example of this relationship he mentions diseases associated with the progress of civilization: different kinds of cancer (e.g. lung cancer), cardiovascular diseases or neuroses. In his view, these diseases are directly associated with the processes of civilizational development and with their negative influence on natural environment. By pointing to this connective and reciprocal aspect of the relationship between man and nature, Goetel enriched the understanding of the idea of nature protection to a large extent. This idea was to be extended by the issue of the influence of the nature, devastated by humans, on their existence on the one hand; on the other, the value of the quality of human life was clearly highlighted. This value was treated as one of nature's resources. In such a holistic perspective, man is treated as an indispensable element of nature, influencing it and at the same time suffering the consequences of his relation to it. This view is connected with a radical departure from anthropocentric attitude to nature: *Nature together with the human environment can be saved only on the condition that man will recognize his affinity to nature instead of gradually distancing himself from it* (Goetel, 1971, p. 25). With this proposal, Polish scientist opened the door to specific humanization of the environmental science. The idea *to protect nature alone* was replaced with the idea *to protect the entire environment*, including inanimate nature, wildlife and anthroposphere. This demanded to include in conservational activities not only the natural history perspective, but also technical, economic and social perspective. Therefore, he made the coexistence of humans and nature one of the superior questions of sozology. It is worth mentioning that this perspective in perceiving the man-nature relationship became some time later a point of departure for the concept of ecodevelopment and the idea of sustainable development.

The third premise for the formulating the idea of sozology concerned Goetel's conviction that the research area framed in the two previous assumptions could be penetrated only with a joined effort of natural history and social sciences as well as technology. Particular natural resources are subject of interest of specific natural sciences such as hydrology or pedology; including the questions of *human life in the environment* into the scope of sozology determines incorporating, for example, medicine, economy and sociology; while taking into consideration the human influence on nature, it is necessary to include in analyzing natural environment and the possibilities for its safe transformation – technology and engineering. Only the combination of these various ways of perceiving the relationship between humans and nature will allow for the description of its actual state, diagnosing the existing or potential threats for both sides of this relationship, as well as designing the methods of solving the present and urgent problems in this respect. This last task of sozology should be particularly stressed. According to Goetel, the proposed environmental science must be of practical nature; it must be an applied science. It is fully reflected in his words: *The new branch of science which we propagate is complex and applied. The goal of this science, containing economic and technical elements, is to aim through the conservation of natural resources to secure their stability of use. In this way the new science strives to bring direct benefits for humanity, for whom using the natural resources constitutes the basis for existence. A science perceived in this way requires the cooperation of naturalists from all branches of this field, as well as technicians and humanists, among them especially economists* (Goetel, 1966, p. 480). Apart from the demands to save natural resources and the practical dimension of sozology, *the benefits for humanity* are taken into consideration, which is directly linked with positivist idea of utilitarianism. Another important fragment of this quotation is the phrase *to secure [the] stability of use [of natural resources]*. In a later text, *Sozology – a Branch of Science, Its Content and Objectives* (Goetel, 1971), he further developed this statement: *securing the stability of use of natural forces and resources, so basic* ***for the future of humanity***. This goal of sozology, described as above, was fully adopted, what needs to be stressed, about twenty years later by the idea of sustainable development. *Nota bene,* in the discussions about the notion of *sustainable development* there appear a number of positions according to which the stability of natural resources constitutes the fundamental element of the definition of this idea (Pawłowski, 2011, p. 39-45).

On the basis of the three abovementioned premises Goetel concluded that sozology can definitely be a separate science, as it fulfills the basic criterion of a science: it has a precisely determined and separate from other branches field of study, and it is equipped with a methodology appropriate to its subject matter. Two first premises delineate its field of study, that is natural environment and especially its resources and the human presence in it. The protection of this holistically perceived environment constitutes the aim of the conducted research. In turn, the third premise points to the research methods sozology should use. These methodologies are varied and well-practiced, used depending on the particular subject matter (specific natural resource). Among them, we count the methodology of natural (and medical) sciences, methods used in

engineering and technology, and the methodology of social sciences. Furthermore, sozology through multidimensional nature of its subject matter very clearly reflects the tendencies of modern science to undertake interdisciplinary research.

Taking into account both practical and applied dimensions of sozology, Goetel proposed that sozotechnology should be isolated from the scope of this science. *Sozotechnology is an introduction to the practice of the recommendations of sozology, and in the face of its extensiveness and the complexity of its tasks it should be a separate branch of technology* (Goetel, 1971, p. 42). At the basis of this conclusion lies the Polish scientist's conviction reflecting moral responsibility – that what has been destroyed in nature by technology and industry should be in turn fixed by them; furthermore, he points to the fact that only suitable technologies as well as rational attitude of the whole of human economy can effectively protect natural resources and prevent further biodegradation. However, above all *Sozotechnology consists in the practical activity of industry that aims to counter the negative sides of scientific-technological revolution and to protect the humans from the future dangers brought about by the excessive technologizing of life* (Goetel, 1971, p. 26). According to Goetel, who in this statement decidedly opposes technocracy, sozotechnology is on the one hand to be a tool of direct conservation of natural resources; while on the other, indirectly, an expression of commitment to the protection of humanistic values of human environment.

Goetel's concept of sozology was broadly accepted in Polish scientific environment. It also drew a wide response in the press. It was discussed, among others, in *Argumenty (Arguments), Kultura i Ty (Culture and You)* and *Kultura (Culture)* magazines (Czerwieniec, 1974, p. 11; Jarocki, 1973, p. 10; Leszczycki, 1972, p. 7-8). It became subject to analyses in works devoted to Goetel and in numerous scientific conferences (Kozłowski, 1989, p. 26-28; 1990, p. 43-48). At the turn of the previous century, the idea of sozology met with increased interest. It resulted in, among others, a suggestion to extend environmental sciences adding sociological issues, as part of so-called *sozosociology* (Piątkowski, 1994). However, the most interesting development of Goetel's idea of sozology was its presentation in a systemic way accomplished by Józef M. Dołęga (2001, 2005).

According to Dołęga, environmental sciences can be practiced according to many different approaches. In relation to this he lists: empirical sozology, which undertakes research on the mutual influence of nature and anthroposphere using the methods of natural history; humanist (anthropocentric) sozology which brings to the fore the humans and their values confronted with nature; and philosophical sozology (which is in fact referred to as *theological sozology*) which highlights the indispensability of placing the idea of nature conservation within philosophical anthropology and natural philosophy (limited in this case to neothomistic interpretation). Dołęga himself is in favour of systemic sozology, which he perceives as a science *about systemic protection of nature from the destructive influence of anthroposphere* (Dołęga, 2006, p. 17). The key notion is that of *systemic protection*. It means to view the environment as a system comprised of a number of interrelated components – subsystems (atmosphere, hydrosphere, lithosphere, the cosmosphere, biosphere and anthroposphere), which together constitute an orderly whole. Each of the systems falls into chaos once any of its components begins to disrupt the inner balance of the system. This is what currently happens in the environment, in which the anthroposphere exerts pressure on the other elements of the system on an unprecedented scale. The general tasks of systemic sozology arise from this condition. This branch of science is to record, control and assess the current state of the environment; to seek the sources of pollution and threats to natural spheres as well as the social element of the environment; to study the influence of the changing environment on the life on Earth as well as on human life and health; finally – to find measures and techniques (new technologies) to protect the environmental system, taking into account the natural and social dimension (Dołęga, 2006, p. 19). The most important question is that of the anthropospheric subsystem. It is not only the reason behind the destructive processes happening in nature's particular subsystems (physical and biological), but at the same time their victim. Therefore, the fundamental sphere of interest of systemic sozology consists of the problems of the quality of human life (health, conditions of life in particular regions, especially the devastated ones, natural surroundings with accompanying flora and fauna) on the one hand; on the other – the possibilities of anthroposphere for protecting widely understood environment (mainly through technology and work on ecological and sozological social consciousness, which should be expressed to the fullest extent in economic activities, politics, law, upbringing or morality). The aims of systemic sozology determined in this way can only be realized through its close cooperation with ecology and other sciences dealing with particular subsystems of the environment: biological, chemical, physical, geological, technical, as well as economic, philosophical, humanistic, legal and social. Such interdisciplinarity is indispensable, as the results of the research obtained by specific sciences constitute the base for the analyses of systemic sozology. It is only on this basis that the directions of conservational activities are formulated, both in respect to particular subsystems, especially anthroposphere, and to the environment as a whole. This cooperation, particularly

with social and humanistic sciences, gives rise at the same time to the creation of a number of new fields of science, such as sozotechnology, sozoeconomy, sozopsychology, sozoethics (environmental ethics), sozological law, sozological politics or sozological pedagogy (Dołęga, 2006, p. 19).

Dołęga's systemic sozology is one of the most mature concepts derived from Goetel's idea of environmental science.

Another idea inspired by Goetel was that of sozophilosophy, conceived by Wiesław Sztumski. According to him, just as it is justified to create ecophilosophy on the basis of ecology, sozophilosophy should be an extension of sozology (Sztumski, 2012, p. 73). He emphasizes, that sozophilosophy is rather a project for the future than an existing separate subfield of philosophy; he notes, however, that from the beginning of the 21st century a number of texts have appeared, written by ecologists, ecophilosophers, sozologists and other authors interested in the problems of nature conservation, which tackle sozophilosophical questions in various aspects, though from a philosophical point of view It is, he stresses, a mark of the beginnings of sozophilosophy (what is worth to be added – as Sztumski writes – in Poland, sozophilosophers gather around the magazine *Problemy Ekorozwoju/ Problems of Sustainable Development*).

The aim of sozophilosophy is to present the perspective in which some of the elements of the environment are particularly significant for determining the goal and sense of human existence. They have an axiological dimension for humans and they belong to various subsystems (spheres) of the environment. If they are in danger of destruction, or irreversibly destroyed, the framework of human life is fundamentally altered. Each of these changes is of a definitely negative nature, as it impoverishes human existence. The sum of these changes could even mean a catastrophic end of humankind. From this point of view, it is essential to undertake conservational activities, encompassing nature and anthroposphere, and especially those components which are most valuable for humans (e.g. clean water, varied fauna and flora, mineral resources, health, faith, privacy) and whose future existence is endangered by the destructive influence of the development of modern civilization. The emphasis that sozophilosophy places on the indispensability of conservation and activities saving the components of the environment which are crucial for humankind is the reason why it is not *a speculative or academic philosophy, but a practical one – a philosophy of life* (Sztumski, 2-12, p. 76). As far as its meaning for the functioning of future human society is concerned, sozophilosophy is to perform a role comparable to that of science and technology.

To make it possible for sozophilosophy to flourish, specific educational conditions need to be met. Sztumski places them in the sphere of social consciousness and he lists among them: assimilating the notion of sozology, distinguishing sozology from ecology, developing sozological consciousness – by analogy to ecological consciousness; and propagating the knowledge of the subject matter of sozology, which includes nature as well as widely understood environment consisting of natural, social and cultural elements (to some extent, this program is realized by the UN in the organizational form of *Decade of Education for Sustainable Development* [2005-2014]). It is even postulated to introduce general and compulsory education in sozology (Sztumski, 2012, p. 74).

The problems of the philosophy of nature conservations are delineated on one hand by natural philosophy and philosophical anthropology. On the other, it is a more general reflection on the place, role and quality of human existence within various subsystems of the environment of human life than it is established in the scope of detailed sozological research. Sztumski particularly highlights this reflection in the studies dedicated to selected spheres of conservation of human surroundings (or as he terms it – landscapes) belonging as subsystems to anthroposphere. They concern the protection of faith, knowledge, space, language (as a means of communication), silence (noise), time, naturalness, freedom, privacy and common sense (Sztumski, 2012, p. 73-230). From the point of view of sozology, not all of the abovementioned spheres of human existence could be a subject of interest (eg. faith, knowledge or common sense). This is the sense of Sztumski's concept of sozophilosophy. It is as if a theoretical extension of the idea formulated by Goetel.

The figure of Goetel is memorable for a number of reason. He was an eminent scientist – a geologist, and had a tremendous impact on the organization of Polish education (especially the Academy of Mining and Metallurgy). His activities in the field of sport and tourism have also received praise. However, he is above all universally recognized as a pioneer of propagating the idea of nature conservation in Poland and as a long-time, devoted initiator, activist and theoretician of this concept. Especially the action in the latter field brought him fame both in the country and abroad. His most significant achievement in this sphere was the formulation in the 1960s of the concept of sozology – an innovative proposal to create an autonomous and interdisciplinary branch of science dealing with nature conservation. The most significant part of this idea was the subject matter of the proposed science – it was supposed to include the protection of not only natural, but also social environment, which was a real breakthrough at the time and today amounts to an indisputable axiom of ecology, ecophilosophy, environmental science (dealing with the protection of widely understood environment) and the idea of

sustainable development. Goetel's role in establishing this premise is invaluable. From this point of view, he is one of the *founding fathers* of dynamically developing abovementioned fields of science and *proecological* philosophical reflections. Numerous current scientists concerned about the state of the environment of human life refer to his idea of sozology. Without Goetel, neither the modern environmental science, nor the concepts of systemic sozology or sozophilosophy discussed in the present text would have been created.

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